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## ABSTRACT

The elementary and secondary education data collection system has undergone a major transformation over the past decade, becoming a coordinated, cohesive system. This report reviews what the National Center for Education Statistics (NCES) can and cannot say about education in the United States for kindergarten through grade 12. Six issue areas have been defined by the Indicators Panel convened by the NCES. In the first part of this document, six types of data are juxtaposed against the following six issue areas: (1) institutions and their characteristics; (2) finance; (3) staffing; (4) curriculum and course content; (5) students; and (6) achievement. The second part of this report is then organized into sections that provide information on continuing data collections, new initiatives, and remaining gaps for each of these broad types of education data. Each section contains a description of the availability of the data specific to its subject, a bibliography of current and planned NCES publications on the topic, and a summary chart of the availability of data. The NCES remains committed to providing timely and policy-relevant data. The data collection system maintains its relevance by remaining flexible and responsive to new policy needs. An appendix provides a short profile of each national survey that collects data on education in kindergarten through grade 12. (SLD)

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# FILLING THE GAPS

## AN OVERVIEW OF DATA ON EDUCATION IN GRADES K THROUGH 12

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U.S. Department of Education  
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NCES 92-132

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# FILLING THE GAPS

AN  
OVERVIEW  
OF DATA  
ON EDUCATION  
IN  
GRADES K THROUGH 12

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National Center for Education Statistics  
November 1992

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"The purpose of the Center shall be to collect, and analyze, and disseminate statistics and other data related to education in the United States and in other nations."—Section 406(b) of the General Education Provisions Act, as amended (20 U.S.C. 1221e-1).

November 1992

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# **Filling the Gaps: An Overview of Data on Education in Grades K through 12**

## **Overview**

The elementary/secondary education data collection system has undergone a major transformation over the course of the past decade. From a very limited universe data collection supplemented with irregular and noncomparable sample surveys, it has developed into a coordinated, cohesive system with 1) State, district, and public and private school universe components; 2) a regularly collected sample survey component with linkable data from districts, schools, principals, and teachers; 3) a student-based longitudinal studies component designed to explore the effects of school processes on student outcomes; 4) a household-based survey component, to address those issues such as early childhood and adult education which are difficult to assess through institution-based surveys; 5) a "fast response" survey component, designed to provide timely data to inform current policy concerns; and 6) an assessment component in selected subjects at grades 4, 8, and 12.

Several recent reports have highlighted the ongoing importance of obtaining good data on elementary and secondary education in the United States. In 1991, the National Education Statistics Agenda Committee (NESAC) of the National Forum on Education Statistics made recommendations for improving the national education data system.<sup>1</sup> In the reports of their technical planning subgroups, the National Education Goals Panel addressed data needed for indicators measuring the National Goals.<sup>2</sup> And a Special Study Panel on Education Indicators convened by NCES produced a report that describes a comprehensive education indicator information system capable of monitoring American education.<sup>3</sup>

The Indicators Panel suggested that "six issue areas [are] a starting point for national discussion and reflection about what matters in American education. They reflect what is important in American education and, hence, what is important in monitoring the health of the enterprise."<sup>4</sup> The issue areas defined by the panel are: 1) learner outcomes: acquisition of knowledge, skills, and dispositions; 2) quality of educational institutions; 3) readiness for school; 4) societal support for learning; 5)

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<sup>1</sup>A Guide to Improving the National Education Data System, National Forum on Education Statistics, October 1990.

<sup>2</sup>Potential Strategies for Long-term Indicator Development, National Education Goals Panel, September 1991.

<sup>3</sup>Education Counts: An Indicator System to Monitor the Nation's Educational Health, Special Study Panel on Education Indicators, September 1991.

<sup>4</sup>Ibid., p. 27.

education and economic productivity; and 6) equity: resources, demographics, and students at risk. The Indicators Panel noted that these "six issue areas are consistent with but, in several important respects, go well beyond the goals chosen by the President and the governors in February 1990."<sup>5</sup> The NCES elementary/secondary data collection system has evolved during the last decade to provide data to inform policy makers and educators on these and other important issues in education policy today. They are among the issues that can be addressed to various degrees by continuing data collections. In addition, new data collection initiatives are under development to respond to new and upcoming policy concerns, including the National Education Goals.

Because the work of the Indicators Panel provides a broad overview of the data needs for education analysts and policy makers, it serves as a useful context against which to review NCES elementary/secondary data collections and data needs. This report is intended to provide a review of what NCES can and cannot say about education in the United States in grades K through 12. This overview section discusses how well the elementary/secondary data collection system can address the six issue areas defined by the Indicators Panel. To do this, six types of data are juxtaposed against each of the six issue areas. The six types of data are 1) institutions and their characteristics, 2) finance, 3) staffing, 4) curriculum and course content, 5) students, and 6) achievement. The second part of this report, therefore, is organized into six sections which provide information on continuing data collections, new initiatives, and remaining gaps for each of these broad types of education data. Each section includes a description of the availability of specific types of education data relevant to its subject, a bibliography of current and planned NCES publications that address the specific topic, and a summary chart indicating the availability of data for topics related to that type of education data. The appendix provides a short profile, focusing on distinguishing design characteristics, of each national survey that collects data on education in grades K through 12.

## **Learner Outcomes**

Student achievement is the "bottom line" of the educational process. The ultimate goal of schooling is to transmit the knowledge and abilities of one generation to the next. Policy makers want to know how students are progressing through the system, what students are learning and achieving, and whether students are being adequately prepared to meet the labor market demands of an increasingly sophisticated and global economy. Learner outcomes include not only the acquisition of knowledge about traditional subjects, but also the internalization of societal values, such as honesty, tolerance, a sense of community, and teamwork. This issue area encompasses various aspects of the National Education Goals: Goal 3 (student achievement and citizenship), Goal 4 (science and mathematics), and Goal 5 (adult literacy and citizenship). Most education data on student outcomes are discussed below in section VI, achievement; however,

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<sup>5</sup>Ibid, p. 25. See pp. 25-26 for a discussion of how the panel's six issue areas align to the six national goals.

other data which may be used to analyze differences in achievement are found in all of the other five data areas.

Achievement data on American students in selected fields and grades have been collected consistently since 1969 through the National Assessment of Educational Progress (NAEP). NAEP reports achievement of 4th, 8th, and 12th grade students on a regular schedule in the areas of reading, mathematics, writing, social studies, geography, and science. NAEP also conducts periodic assessments of other subjects, such as civics and computer competence. Proficiency levels have been established for reading, writing, mathematics, and science, allowing meaningful statements to be made about students' achievement in meeting specific curricular objectives. Some limited background information relating specifically to student achievement is collected from the school, the teacher, and the student. These data include such measures as amount of homework assigned, policies on ability grouping, use of various subject-specific instructional techniques, and amount of television viewing.

Efforts have been made to replicate internationally the success that NAEP has had in measuring the achievement of American school children. The International Assessment of Educational Progress (IAEP) was conducted in 1988 and again in 1991. In addition to the assessment instruments, this survey also collected background information from the country, the school, and the student of the same types collected in NAEP. A great challenge for IAEP is the development of assessment instruments that are comparable in different languages and for different cultures. While it seems that the IAEP has been successful in bridging this gap, more work in this area is clearly warranted.

The Third International Mathematics and Science Study (TIMSS) is currently being designed to measure American students' progress toward the fourth national goal of being first in the world in mathematics and science by the year 2000. The results of the study will be released in 1995 and will allow comparisons of U.S. students' achievement with that of students from approximately 40 other countries. In addition to comparative test scores, TIMSS will put special emphasis on designing good background questions on schools, teachers, and curriculum (including opportunity to learn). These background questions will provide information about the explanatory variables associated with student performance, and may help to explain the United States' relative performance on the assessment instruments.

Student assessments such as NAEP, IAEP, and TIMSS are useful for measuring the progress of student achievement over time. But they do not assess the acquisition of societal values by students. And their limited background information on schools and teachers does not permit analysis of some important policy issues such as educational equity and teacher quality. NCES longitudinal studies such as High School & Beyond (HS&B) and the National Educational Longitudinal Study of 1988 (NELS:88) have filled



this second role, by providing student assessment results as well as contextual information on the student's educational environment.

One strength of these longitudinal studies can also be viewed as a limiting factor. Because longitudinal studies follow one grade of students over time, it is not possible to generalize the results from these studies to all students, only to those in that grade in that year. The use of single-grade cohorts followed over time rather than national cross-sectional samples of students in all grades limits the generalizability of the data to the grade population followed in the longitudinal study. If individual student outcome measures could be added to a recurring national cross-sectional survey such as the Schools and Staffing Survey (SASS), student achievement in all grades could be measured and related to school context variables.

### **Quality of Educational Institutions**

The Indicators Panel suggests that the quality of educational institutions can be defined by five main concepts: learning opportunities, teachers, conditions of teachers' work, places of purpose and character, and school resources. This issue area "includes, but goes well beyond, National Education Goal 6 (safe, disciplined, and drug-free schools)."<sup>6</sup> Most of the education data to inform this issue area are found below in section I (institutions and their characteristics), section III (staffing), and section IV (curriculum and course content).

#### *Learning Opportunities*

Because our educational system is based upon a system of local control, curriculum and course content can vary widely among states, school districts, and schools. This can result in students in some schools not having the "opportunity to learn" certain subjects that are available to other students. NCES surveys which assess student achievement reflect the importance of data on curriculum and course content to the opportunity which students have to learn about assessed subjects. Both NAEP and NELS:88 collect information about the school curriculum, course content coverage, and major topical areas covered in a given course. In addition, these surveys include questions for the teacher about the amount of time and emphasis given in the classroom to different teaching techniques as well as to different topical areas in the courses that they teach. Data on course offerings, enrollments, and instructional time are not currently available, however, for a national sample of schools and teachers. NAEP is limited to 4th, 8th, and 12th graders, and NELS:88 is a longitudinal survey of an 8th grade cohort with 2-year followups. NCES' national survey of schools, the Schools and Staffing Survey, does not currently have information on curricular offerings. A set of questions on offerings in 7th and 8th grade math and science are being field tested in

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<sup>6</sup>Ibid, p. 26.

1992, however, and may be included in the 1994 SASS. Data on curricular offerings may also be collected by the proposed Early Childhood Longitudinal Study (ECLS).

Two new efforts funded by NCFS may help to make our measurement of curricular offerings much more feasible. One effort will create a common coding classification system for courses in elementary and secondary education. This "student handbook" will enable schools, school districts, and states to report course offerings using consistent definitions. A second effort is a computerized student record system which will allow transfer of student transcripts both between school districts and between schools and postsecondary institutions. This system, if broadly implemented, would make data collection on student course taking patterns much more comparable and timely.

### *Teachers*

Beginning in the 1980s, NCES collected detailed information on the characteristics and qualifications of teachers. Information collected includes years of full- and part-time teaching experience in public and private schools, major and minor degree fields for all earned degrees (from associate degree to Ph.D), type of certification in teaching assignment fields, college coursework in mathematics and science, and, to a limited extent, participation in in-service education. The inclusion of these measures in SASS allows for an assessment of the qualifications of the current teaching force.

But the term "qualifications" is not synonymous with "quality." The characteristics that contribute to good teaching are many, and no single configuration of traits, qualifications, or behaviors unvaryingly produces optimal student outcomes in all situations. NCES teacher surveys have concentrated on collecting data on "qualifications," rather than trying to define "quality." In order to define and measure "quality," characteristics and qualifications of teachers must be related to growth in student achievement.

The qualifications measures that NCES does collect cannot currently be related to measures of student achievement except in certain grades covered by the longitudinal studies such as NELS:88. Development of a measure of "teacher quality" would be hastened by obtaining student outcome measures that could be linked to the rich nationally representative data on teacher qualifications available in SASS. In 1991, NCES field tested a student survey form that collects data on a sample of students for each SASS teacher. These data are collected from the information available in school records, and not directly from the student. In 1994, the student records form will be applied on a larger scale with a sample of students in schools with high concentrations of Native Americans. This student records form, if found to be feasible, could provide the data necessary to improve our understanding and measurement of "teacher quality."

### *Conditions of Teachers' Work*

School is not only a learning environment for students, it is also a working environment for teachers. The Schools and Staffing Survey is the main source for data on the school workplace. Data are collected from teachers and school principals on the amount of influence teachers have over school and classroom policies such as discipline and textbook selection. Opinion items also are collected from teachers on their satisfaction with the level and quality of administrative support, rule enforcement and school climate, cooperation among staff, teachers' role in decisionmaking, and adequacy of resources. While data are available on teachers' perceptions of their working conditions, our knowledge of the content and effectiveness of in-service education is scant. The 1991-92 SASS (field test) and the first-followup of NELS:88 feature extensive questions on the types of in-service education taken by teachers. Information on how this training is integrated into the classroom is lacking.

### *Places of Purpose and Character*

The Indicators Panel suggests that good schools provide a clarity of mission, a human environment, basic order and safety, and a press toward academic work. Elementary/secondary data collections address several of these features. The sense of mission of the school is assessed in both SASS and NELS:88 from the principal's report of the relative importance of various school goals. SASS also collects opinion items from teachers on the goals and priorities for the school and the extent to which teachers share the same beliefs and values about the central mission of the school. The human environment can be measured by opinion items in SASS on teacher collegiality and administrative support. NELS:88 questions teachers on what emphasis is given to individual versus small group versus whole class instruction. NELS teachers also report the extent to which they challenge individual students and counsel students on career opportunities. Finally, NELS:88 collects extensive information on the academic press which schools require of their students in the form of textbooks selected, instructional practices used, topics covered, and courses offered.

Data on order and safety have been collected from school districts, schools, and teachers in three recent Fast Response Survey System (FRSS) surveys about safe, disciplined, and drug-free schools. Some of the FRSS survey items are being field tested for inclusion in the 1994 SASS. Questions on school problems such as vandalism, absenteeism, and student pregnancy are collected in SASS and NELS:88. A major component of the National Household Educational Survey (NHES) in 1993 will be school safety and discipline in grades 3 through 12. Data will be collected on parents' knowledge and perceptions of crime and safety, disciplinary policies and practices, and drug and alcohol education programs in their children's schools. A sample of students will be asked similar information making it possible to compare student and parent perceptions of the same school.

## *School Resources*

The Indicators Panel's concept of school resources refers to whether or not schools are well enough equipped to carry out their responsibilities.<sup>7</sup> Whether or not schools provide the staff, equipment, time, and materials necessary for essential instructional activities conveys important information about their potential for educational quality. Buildings, libraries, laboratories and technology, and professional personnel are some of the resources that schools need to perform their educational function.

The elementary/secondary data collection system does not currently collect information with which to assess the quality of school buildings and other physical facilities. Although the need for data on the number, age, and condition of schools has been discussed by both the Indicators Panel and NESAC, these data were accorded a relatively low priority for the national data system when viewed in light of high data collection costs and burden.

Beginning in 1994, NCES will collect data on school libraries through the Schools and Staffing Survey. The SASS library survey will provide information on school library media center facilities, collections, equipment, technology, staffing, income and expenditures, and services. The SASS librarian survey will look at characteristics and qualifications of school librarians, including academic background, work load, career history and plans, and compensation. Several items will also focus on the integration of library services into the curriculum and cooperative activities between librarians and the teaching staff in developing course materials.

National level data on the use and availability of laboratory equipment and computers for instruction are available for eighth graders from NELS:88. Some background items on the use of laboratory equipment, calculators, and computers are also available for grades 4, 8, and 12 from NAEP. Every five years, the Current Population Survey (CPS) collects data on computer use in the home and at school or work. In the early 1980s, two FRSS surveys were conducted on the instructional use of computers in schools. But more recent school-level data on the quality of laboratories and availability of new technology for instruction are not currently available. A cross-sectional survey of K through 12 schools such as the Schools and Staffing Survey could be used to collect these data on a more regular basis.

The availability of high quality "human resources" (teachers, administrators, librarians, guidance counselors, etc.) plays an important role in determining the quality of education that each child receives. Data have been collected which can describe

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<sup>7</sup>The panel views school finance as an aspect of societal support for education, discussed below, because schools rarely control and allocate their own budgets.

1) the availability of qualified teachers<sup>8</sup> to different types of school districts, schools, and students; 2) the level of staff resources available (e.g., pupil-teacher ratios, pupil-staff ratios) to students; 3) staffing patterns used to support and deliver instruction to students (e.g., use of specialists such as librarians and counselors) in different types of schools; and 4) the status of school personnel (full-time, part-time, itinerant, temporary, or substitute), which provides an indicator of the staff stability and cohesiveness that students in various types of schools encounter, as well as reflecting the extent of hiring difficulty experienced by different types of schools.

### **Readiness for School**

Inextricably tied to student achievement throughout the elementary and middle school years are the skills and abilities that young children bring to the educational process. This issue area, identified by the Indicators Panel, maps most closely to one of the National Goals, which asserts that "by the year 2000, all children in America will start school ready to learn." Yet the elementary/secondary data collection system has not historically collected information on early childhood education or the extent to which children come to elementary education ready to learn. Details on current and planned data collections on topics related to school readiness may be found mostly in section V, students.

The National Household Educational Survey (NHES) of 1991 attempted to fill one of these data voids by collecting data from households on the educational activities of young children. These data, while only recently available, provide detailed information on the types of educational activities in which young children (3 to 8 years old) participate, as reported by their parents. The Early Childhood component of NHES will be repeated on a regular basis, so that trends in early childhood education can be identified.

Other data collections are planned or proposed to address the educational experiences of young children, both within and outside of formal educational settings. The Current Population Survey October supplement will include questions in 1992 on the activities of young children who are not enrolled in formal educational programs such as nursery school or prekindergarten. These data will give policy makers a better understanding of the prevalence of alternatives to formal early childhood education, including day care.

One study which has been proposed, but has not yet been funded, may contribute a great deal to understanding this issue area and our measurement of the goal of school readiness. The Early Childhood Longitudinal Survey (ECLS), is currently in the planning stages. This survey will follow longitudinal cohorts of newborns (perhaps

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<sup>8</sup>See also the discussion above on the definition and measurement of "teacher quality."



starting even prenatally) and kindergartners. This study would collect a wealth of information on children (and their educational activities and achievement), parents, and (when appropriate) schools similar to that collected in NELS:88. A major focus of the ECLS may be the collection of data pertaining to the five domains of school readiness identified by the National Education Goals Panel: physical well-being and motor development, social and emotional development, approaches toward learning, language usage, and cognition and general knowledge. These domains could be assessed through multiple methods, including direct observation of the child, parent report, teacher observations, and child performance portfolios.

School readiness is, at the present time, one of the least well-measured of the Indicators Panel's six issue areas. Several new data collection efforts are underway or in planning to fill this gap, however. By the middle or end of the decade, several new and proposed surveys will have made a significant contribution toward closing this current gap in the NCES elementary/secondary data collection system. With these additional data, NCES will have the capability to consistently and accurately provide the information needed to measure this national goal.

### **Societal Support for Learning**

The Indicators Panel views this rather broad issue area as encompassing four types of societal support for learning: family support, community support, cultural support, and financial support. While this issue area does not correspond readily to any of the National Goals, it does reflect the concern in the President's America 2000 plan with the "other 91% of student time outside school." Data collected in this area can be found in section II (finance) and section V (students).

Family support for learning includes concepts addressed by many of the items currently collected in NELS:88, as well as items planned for the ECLS, if funded. Parents who collaborate in their children's education provide a learning environment at home, ensure proper basic care for their children, and become involved in school activities. Parents' beliefs about the value of education and parental involvement in instruction are tapped by items relating to parents' education aspirations for their children: tutoring, checking on homework, providing cultural experiences, and encouraging leisure reading. NELS:88 also collects data on how long children are at home without parental supervision. Data on parental involvement with the school is collected through questions about participation in volunteer activities and parent-teacher associations. Some of these types of data are also collected in the NAEF background questionnaires, but to a more limited degree.

Community support for learning includes educational programs outside of the traditional school setting, such as public libraries, museums, music organizations, and corporate outreach efforts. Basic data on public libraries are collected annually through the Federal-State Cooperative System for public library data. This information includes

staffing, operating income and expenditures, size of collection, and service measures such as reference transactions, interlibrary loans, and circulation. More detailed information on public library use by students was collected in two FRSS surveys, Young Adult (12- to 18-year-olds) Services in Public Libraries in 1987 and Services to Children (14 years old and younger) in Public Libraries in 1989. These surveys obtained information on the availability of services for students, availability and qualifications of special librarians for these age groups, and cooperation and coordination among libraries, schools, and day care centers. Another FRSS survey in 1988, Education Partnerships in Public Schools, addressed corporate outreach efforts. This survey obtained information on the number and types of education partnerships, how they were initiated, and the areas for which support was targeted. Although these FRSS surveys have collected data to measure community support for learning, they are not regular and periodic components of the elementary/secondary data collection system. Continued collection of this type of information is not currently planned, although the sponsors of these surveys could request that they be repeated in the future.

Cultural support for learning, as envisioned by the Indicators Panel, includes several concepts not covered by the elementary/secondary data collection system. These include data on citizen attitudes and voting behavior, adult reading behavior, and societal competition with learning. Some aspects of societal competition with learning, such as television viewing and outside employment of students, are collected in NAEP and NELS:88. Other aspects, such as the influence of advertising on students' expenditures and patterns of student consumerism, are not currently addressed in elementary/secondary surveys.

Current and planned data collections on two aspects of financial support for learning, revenues and expenditures, are addressed in section II, finance. Financial statistics are primarily obtained through the fiscal component of the Common Core of Data (CCD), a universe data collection system for public schools, and the Bureau of the Census' F-33 survey, a state representative survey of school district finances. Data on revenues and expenditures can be analyzed in the context of state and local district characteristics (number of students, percent minority enrollment, pupil/teacher ratio) in order to evaluate fiscal equity across these characteristics. The availability of the Census Mapping Project in 1993 will also permit an assessment of financial comparability across school districts in communities with different levels of socio-economic status. At this time, school finance data cannot be linked directly to student characteristics or outcomes because the student-based surveys in the elementary/secondary data collection system (NELS:88, NAEP) do not include measures of revenues or expenditures from schools, and school level financial statistics are not available from the CCD or the F-33 survey. In addition, financial statistics on private schools are not available at this time, hindering our understanding of the relative resource commitments in the public and private education sectors, how they change over time, and how revenues and expenditures differ between the sectors. And while some revenue and expenditure data are available for public libraries, no data are currently collected on the revenues and expenditures of

other educating institutions such as museums, youth and church groups with educational programs, adult learning centers, and the like. The finances of these nontraditional types of education providers constitute the panel's third area of financial support for learning, for which data are currently very sparse.

### **Education and Economic Productivity**

Three out of the four components that comprise this issue area (economic consequences of education and training, workplace support for education and skill development, and research and development role of higher education) are outside of the scope of the elementary/secondary data collection system. A portion of the fourth component, the formal education pipeline, occurs within elementary and secondary schools. This issue area relates to Goal 2 (high school completion) and aspects of Goal 3 (preparation for productive employment in our modern world) and Goal 5 (skills to compete in a global economy). Data on the formal education pipeline can be found in section V, students.

Educational persistence is an important aspect of the formal education pipeline. Students who do not remain in school have reduced opportunities to acquire the skills needed to compete in a global economy. Data on the number of dropouts by sex and race/ethnicity will be collected for grades 7 through 12 by the Common Core of Data beginning in 1993. More detailed information about individual dropouts is collected through NCES' longitudinal surveys such as HS&B and NELS:88. NELS:88 was the first NCES longitudinal survey to go below the high school level and so provide a picture of the transition between middle school and high school. If funded, the ECLS will complete the picture with data on early childhood experiences and the transition to elementary school, as well as the transition from elementary school to middle school. New longitudinal studies that will be conducted by NCES beginning in the 1990s will also contribute to our understanding of educational persistence. These include the Beginning Postsecondary Students study, which follows new postsecondary students through and beyond their college careers, and the Baccalaureate and Beyond, which will follow new degree recipients through their transition to the workplace or postgraduate education. The data collected in these surveys will go a long way toward enhancing our understanding of the education pipeline, and how the transitions that students encounter affect their educational persistence.

Another aspect of the formal education pipeline is the course taking behavior of students at various points in their educational careers. A student who has not learned basic scientific principles in the early grades is unlikely to pursue scientific studies later in their career. Data on course taking patterns is available through NAEP (1987 and 1990), NELS:88, and will be collected in ECLS. The preparation of elementary school teachers to teach some subjects such as mathematics and science can be addressed with the SASS. And both NELS and SASS collect information on school policies related to



academic tracking, which may influence the particular pipeline along which a student travels.

## Equity

As the Indicators Panel noted, this issue areas cuts across all of the other five. "In any of the other five, it is legitimate to ask, 'How does this issue play itself out for different groups of students in different settings?'"<sup>9</sup> Any discussion of educational equity must address the extent to which students from different racial/ethnic or gender groups receive comparable educational resources. NESAC recommended that NCES attempt, to the extent feasible and appropriate, to report education data disaggregated by student and community background characteristics such as sex, race/ ethnicity, student handicapping conditions, community wealth, and family income. Many of the surveys in the elementary/secondary data collection system have student components, which provide valuable information for assessing educational equity. Data on individual student characteristics are collected in the longitudinal studies of students such as NELS:88, as well as in assessment studies such as NAEP and IAEP. Some student characteristics are also included in the two household-based surveys, NHES and CPS. Data reported from these surveys are often classified by student characteristics and so enable policy makers to assess equity of educational resources. Unfortunately, many student-based surveys exclude students with handicaps or language problems, magnifying the difficulty of determining whether these types of students receive equitable education opportunity. In 1991, the SASS piloted a student records survey to collect administrative records data on individual students from schools. Because the data for these students are linked to individual teacher data, questions about the equitable allocation of human resources ("good teachers") to different types of students can also be addressed.

Two projects enable policy makers to look at educational equity across school district boundaries. In the second and seventh year of each decade, the F-33 survey provides universe data on revenues and expenditures for all school districts. When analyzed in conjunction with state and local district characteristics (number of students, percent minority enrollment, pupil/teacher ratio), these data provide information about fiscal equity both within and among states. The Census Mapping Project in 1993 will identify the socio-economic status of the communities in which school districts are located. This information, when linked to NCES surveys of schools and students, will provide a valuable gauge of the equitable distribution across community types of many types of educational resources, including finances, teachers, advanced courses, services for students, and libraries, to name a few.

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<sup>9</sup>Ibid, p. 37.

## Conclusion

The elementary/secondary data collection system has improved dramatically in recent years in its ability to address key issues of concern to educators, policy makers, and the American public. NCES has continually demonstrated its ability to answer descriptive questions about the components of the educational system such as how many students, how many teachers, what characteristics of schools. But NCES has not shown that its data systems can address some of the more difficult questions about why some schools and teachers are effective in generating student learning. While some new issue areas such as school readiness and societal support for learning are now beginning to be addressed, thinking about data to address other areas such as school quality has only just begun. NCES is committed to providing timely, policy-relevant data. The elementary/secondary data collection system maintains its relevance by remaining flexible and responsive to new policy needs.

## I. INSTITUTIONS AND THEIR CHARACTERISTICS

The characteristics of schools, their governance, policies, practices, and basic conditions, set the context for teaching and learning. Monitoring these core features of schools--their organizational structure, size, curricular emphasis, the characteristics of their student bodies and staff, their programs, facilities, and overall environment--is one of the primary objectives of the elementary-secondary data system. Schools which serve grades K to 8 vary widely along all of these dimensions, providing different educational experiences to different populations of elementary school children.

### Continuing Data Collections and New Initiatives

Public versus private governance is a basic distinguishing feature of schools, both elementary and secondary. Prior to 1987, data on private education were collected in different years and with different survey content than data on public education. Public and private comparisons were possible for that subset of items which were similar, although the data collection cycles were not concurrent. Beginning in 1987-88, SASS, NELS, and NAEP all began expanding their private school samples so that comparable data could be collected from public and private schools in each of the surveys in the same data collection year. In addition, a biennial private school universe data collection, the Private School Survey (PSS), was undertaken beginning in 1989-90. The PSS provides universe data on basic characteristics of private schools and serves as a private school sample frame for other NCES surveys. A small sample of the PSS universe is contacted by telephone every year in the Early Estimates Survey in order to collect basic data on private school enrollments, teachers, and graduates for the current school year.<sup>10</sup> These improvements in private school data collection are important because the 25 percent of the nation's schools that are private educate almost 12 percent of the nation's students. Current policy debates on choice would also be informed by better data on private schools.

Other basic descriptors that help define the context in which schools operate are also collected consistently in national surveys with data on grades K through 12. NCES elementary/secondary surveys with school components (CCD, SASS, NELS, and ECLS when instituted) collect information on school size, school type, grades served, community type in which the school is located, and the racial/ethnic composition of the student body. Schools may also be described in terms of their teacher workforce. School level information on the racial/ethnic composition, degree level, and experience of the total school teaching force is available from the SASS school questionnaire. These descriptors are essential, not only because they help produce basic data about the educational system in the United States, but also because they help to explain differences

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<sup>10</sup>These data are reported in conjunction with statistics for the current school year on public education in the annual Early Estimates report released each December 31.

between schools on other dimensions, such as student achievement, teacher quality, teacher retention, or curricular emphasis. The link between educational policy and student outcomes is mediated by these school organizational factors.

Students' learning experiences in grades K through 12 may be affected by the types of programs and services offered in the schools which they attend. The elementary/secondary surveys enable policy makers and researchers to answer questions about the types of programs and services offered, the number of children served, the differential allocation of programs by types and location of schools, and the availability of special programs to children with special needs. Data are also available on libraries and librarians, and on the use and availability of computers for eighth graders.

An important characteristic of schools, and one which is reflected in the National Goals, is as a safe, disciplined, and drug-free environment for learning. Elementary/secondary surveys collect information on teachers' and principals' perceptions of school problems, school discipline procedures, drug use incidence and education. A recent Fast Response Survey focused exclusively on collecting information to inform this goal from principals, teachers, and school districts. A major component of the National Household Educational Survey (NHES) in 1993 will be school safety and discipline in grades 3 through 12. The elementary/secondary data collection system plans to expand this area further in order to provide data toward measuring the National Goals.

## Gaps

Four issues stand out as gaps in the elementary/secondary data collection system: 1) socio-economic status of students; 2) quality of facilities; 3) state level data on private schools; and, 4) data on early school processes and transitions. SES of students is important for understanding, among other things, student outcomes including achievement test scores and graduation rates. Two types of SES measures are currently collected--the SES of individual students, which is a family characteristic, and the aggregate SES of the students in a school, which is a school characteristic. Among elementary/secondary surveys, NELS:88 is the only school-based survey which collects the information necessary to calculate student SES. Other elementary/secondary surveys have consistently collected data on participation in Federal free lunch programs. This variable, despite its measurement difficulties, is often used as a proxy for measuring the SES of the student body or the community in which the school is located. Not only is "percent free lunch eligible" an imprecise statistic, it is also very difficult to justify using in analyses with private schools, who often report that no students are eligible when in fact the school does not participate. One of the recommendations of the National Education Statistics Agenda Committee (NESAC) of the National Forum on Education Statistics was that a research study focus on ways to improve our measurement of this

important mediating variable.<sup>11</sup> And the completion in 1993 of the project to map decennial census information to school district boundaries will enable most elementary/secondary data to be linked to school district SES measures for analysis.

A second obvious gap in the data collected on institutions is the total lack of information on school buildings and physical facilities. None of the elementary/secondary surveys collect data on the physical plant, and none currently plan to do so. Without this information, we cannot answer questions about the age and condition of public or private school structures or the amount of time before major capital expenditures will be necessary to upgrade aging facilities. Another NESAC recommendation was that "NCES should establish as a long-term objective the collection of data regarding the number, age, condition, and facilities needs of the Nation's schools." After deliberating the cost, burden, and usefulness of this information at the national level, however, the Forum gave it a relatively low priority.

Third, as part of NCES' overall effort to provide comparable statistics for public and private education, another gap in data on institutions has been identified. Although both sample and universe data on public schools are available by state, surveys of private schools up to the present have not been designed to yield state-level estimates. Under consideration is a proposed expansion of the area frame component of the private school universe data collection to enable state-level estimates. This expansion will provide opportunities for sample surveys, such as SASS and NAEP, to increase their private school samples to provide state-level data.

Finally, no data are currently available on the institutions that provide early childhood education. Critical to our understanding of school readiness are data on early school processes and transitions. Although NHES has recently begun collecting data on the educational activities of young children, no information is yet available on the number and types of schools that they attend. The proposed Early Childhood Longitudinal Survey (ECLS) would follow a birth cohort and a kindergarten cohort and would collect information on the schools that these children attend. Not only would these early longitudinal studies, if funded, provide valuable information on school readiness, early childhood educational processes, and transitions to elementary education, but, for the first time, student outcome and dropout statistics could be collected for students below the eighth grade.

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<sup>11</sup>A Guide to Improving the National Education Data System, October 1990.

## **Institutions and Their Characteristics Bibliography**

### **Released Reports**

E.D. Tabs - Public Elementary and Secondary Schools and Agencies in the United States and Outlying Areas: School Year 1990-91 (NCES 92-031) (also available for earlier years)

E.D. Tabs - Public Elementary and Secondary State Aggregate Data, by State, for School Year 1989-90 and Fiscal Year 1989 (NCES 91-035) (also available for earlier years)

Directory of Public Elementary and Secondary Education Agencies, 1989-90 (NCES 91-039) (also available for earlier years)

Characteristics of the 100 Largest Public Elementary and Secondary School Districts in the U.S.: 1988-89 (NCES 91-062)

Early Estimates - Public and Private Elementary and Secondary Education Statistics: School Year 1991-92 (NCES 92-032) (also available for earlier years)

Technical Report - Assigning Type of Locale Codes to the 1987-88 CCD Public School Universe (NCES 89-194)

Schools and Staffing in the United States: A Statistical Profile, 1987-88 (NCES 92-120)

E.D. Tabs - Comparisons of Public and Private Schools: 1987-88 (NCES 90-085)

E.D. Tabs - Characteristics of Private Schools: 1987-88 (NCES 90-080)

E.D. Tabs - Detailed Characteristics of Private Schools and Staff: 1987-88 (NCES 92-079)

E.D. Tabs - Diversity of Private Schools (NCES 92-082)

Private Schools in the United States: A Statistical Profile, with Comparisons to Public Schools (NCES 91-054)

Conference Paper - Schools at Risk: Results of the 1987-88 Schools and Staffing Survey

A Profile of Schools Attended by Eighth Graders in 1988 (NCES 91-129)

E.D. Tabs - A Profile of American Eighth Grade Math and Science Instruction:  
NELS:88 Teachers, Schools, and Students (NCES 92-486)

E.D. Tabs - The Tested Achievement of The National Education Longitudinal Study of  
1988 Eighth Grade Class (NCES 91-460)

School Effects on Educational Achievement in Mathematics and Science: 1985-86 (NCES  
92-066)

### **Reports in Preparation**

E.D. Tabs - Private School Universe Survey: 1989-90

Schools and Staffing in the United States: A Statistical Profile, 1990-91

Private Schools 1986-1990: A Data Synthesis

Schools at Risk: Results of the 1987-88 Schools and Staffing Survey



**CHART I. INSTITUTIONS AND THEIR CHARACTERISTICS**

	Continuing Data Collections	Planned New Initiatives	Gaps
A. Basic statistics/size and numbers	<ul style="list-style-type: none"> <li>- CCD 86 through 92; Local education agencies and public schools by size (membership) and grades served.</li> <li>- PSS 90, 92; Number of private schools and students by size, affiliation and grade.</li> <li>- SASS 88, 91; Number of public schools by state, and private schools by affiliation; student enrollment by grade, school; pupil/teacher ratios; class size.</li> <li>- NELS:88; Size of school and size of eighth grade class; pupil/teacher ratios available from teacher survey.</li> <li>- NAEP; Size of school</li> <li>- CPS; Enrollment of children 3 years old and above in regular schooling.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect basic school information, similar to NELS:88, beginning in 1996 for elementary schools.</li> </ul>	<ul style="list-style-type: none"> <li>- Basic statistics on institutions providing early childhood education.</li> <li>- TFS; Information on the types of schools to which teachers move. (Currently only community type and public/private sector are collected).</li> </ul>
B. Organization of school	<ul style="list-style-type: none"> <li>- CCD 86 through 92; School and district (grade span); membership by grade.</li> <li>- PSS 90, 92; Grade range of school, type of school (regular, special emphasis, magnet, special education), religious affiliation.</li> <li>- SASS 88, 91; Grades and grade ranges (PK to 12); type of school (regular, special emphasis, magnet, special education); private school affiliation, orientation, type.</li> <li>- NELS:88; Data on departmental structure of school. Public and private (Catholic, NAIS and other private).</li> <li>- NAEP; Public and private.</li> <li>- CPS; Enrollment by grade. Full or part-day program.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to NELS:88 beginning in 1996 for elementary schools.</li> </ul>	

CCD - Common Core of Data = Grades PK to 12 (universe)  
 CPS - Current Population Survey = Children aged 3 and above (sample of households)  
 ECLS 96 - Proposed Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
 FRSS - Fast Response Survey System (sample)  
 NAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 NELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 NHES 91 - National Household Education Survey of 1991 = Grades K to 12 (sample)  
 PSS - Private School Survey = Grades K to 12 (universe)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)  
 TFS - Teacher Followup Survey = Grade K to 12 (sample)

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CHART I. INSTITUTIONS AND THEIR CHARACTERISTICS

	Continuing Data Collections	Planned New Initiatives	Gaps
C. Type of schools (EL/Sec/Combined, location, composition of student body and teaching staff)	<ul style="list-style-type: none"> <li>- CCD 86 through 92; Schools of a specialized type (special ed/voc. ed/alternative) are coded separately from "regular" schools. Seven locale codes from rural to inner-city of very large city are assigned to each school. Student racial/ethnic counts (by the 5 categories used by OCR) are given for each school.</li> <li>- PSS 90, 92; Grade level of school and type of locale.</li> <li>- SASS 88, 91; School level; Type of locale, by state and region. In 1991, SASS can be linked to the CCD, allowing identification of "inner city" schools through the use of CCD locale codes. Number of students by race/ethnic group by school; Number of students eligible/ receiving free lunch (SES indicator); number of students eligible/receiving Chapter 1 services; number of teachers by experience, degree attainment; Number of teachers by race/ethnic group.</li> <li>- NELS:88; Data for student body characteristics including race, ethnicity, general family income level (data necessary for SES measure); data on student age, race/ethnicity, sex, family composition.</li> <li>- NHES 91; Collected data on public vs. private status and church related for nursery schools and K-3; data on group size and staff/pupil ratio for nursery schools only.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect school characteristics, similar to NELS:88, beginning in 1996 for elementary schools by public and private.</li> </ul>	<ul style="list-style-type: none"> <li>- CCD 86 through 92; Membership counts are not provided for special schools if students have been counted in a regular school.</li> <li>- SASS 88; identification of "inner city" schools.</li> <li>- SASS 88, 91; reliable SES indicator beyond number students receiving free lunch.</li> </ul>

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 CPS - Current Population Survey = Children aged 3 and above (sample of households)  
 ECLS 96 - Proposed Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
 FRSS - Fast Response Survey System (sample)  
 NAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 NELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 NHES 91 - National Household Education Survey of 1991 = Grades K to 12 (sample)  
 PSS - Private School Survey = Grades K to 12 (universe)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)  
 TFS - Teacher Followup Survey = Grade K to 12 (sample)

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**CHART I. INSTITUTIONS AND THEIR CHARACTERISTICS**

	Continuing Data Collections	Planned New Initiatives	Gaps
C. Type of schools (continued) (El/Sec/Combined, location, composition of student body and teaching staff)	<ul style="list-style-type: none"> <li>- NAEP; Length of school day and year, school enrollment, absenteeism, dropout rates, size and composition of teaching staff.</li> <li>- Int'l; School information from the International Reading Literacy Study and the International Assessment of Educational Progress.</li> </ul>		
D. Quality of building/facilities			<p>None of the elementary/secondary surveys collect information on the quality of buildings or facilities.</p>
E. Availability of services and programs	<ul style="list-style-type: none"> <li>- CCD 86 through 92; Count of students receiving special education services by LEA.</li> <li>- SASS 88, 91; NELS:88; availability and number students served in programs for remediation (math, reading), limited English proficiency (ESL and bilingual), gifted and talented, handicapped (special education), day care, Chapter 1 (SASS only), and free lunch.</li> <li>- NAEP; Special priorities and school-wide programs, availability of resources, special services, community services.</li> </ul>	<ul style="list-style-type: none"> <li>- SASS 94; Number of LEP students and programs in which served (more detailed than in previous collections).</li> <li>- If funded, ECLS will collect data similar to NELS:88 beginning in 1996 for elementary schools.</li> </ul>	<ul style="list-style-type: none"> <li>- CCD 86 through 92; There are 6 states (KS, KY, OH, OK, PA, WA) which do not report these data on the CCD surveys.</li> </ul>

CCD - Common Core of Data = Grades PK to 12 (universe)  
 CPS - Current Population Survey = Children aged 3 and above (sample of households)  
 ECLS 96 - Proposed Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
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 NAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 NELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
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 PSS - Private School Survey = Grades K to 12 (universe)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)  
 TFS - Teacher Followup Survey = Grade K to 12 (sample)

CHART I. INSTITUTIONS AND THEIR CHARACTERISTICS

	Continuing Data Collections	Planned New Initiatives	Gaps
F. Order and safety in the schools	<ul style="list-style-type: none"> <li>- SASS 88, 91: Teachers and principals rated seriousness of problems of discipline, alcohol, drugs, vandalism, physical conflict and abuse; locus of control re: student discipline.</li> <li>- FRSS 91: school and district policies and curriculum re: drug, alcohol, and student discipline; teachers' and principals' perceptions of problems re: same; incidence of such problems.</li> <li>- NELS:88: Information about drugs, alcohol, fighting in school and on the way to/from school, and discipline in schools.</li> <li>- NAEP: Policies for parental involvement and reports of school-wide problems.</li> </ul>	<ul style="list-style-type: none"> <li>- SASS 94: Teacher reported incidents of student misbehavior, drug or alcohol use, abuse.</li> <li>- NIES 93 will collect data for grades 3 through 12 on the level of safety and discipline in schools.</li> <li>- If funded, ECLS will collect data similar to NELS:88 beginning in 1996 for elementary schools.</li> </ul>	
G. Libraries and librarians	<ul style="list-style-type: none"> <li>- SASS 88, 91: Number of librarians and library aides; 1991 Teacher Survey-coordination with librarians.</li> <li>- FRSS 89: Public library services and resources for children (14 and under).</li> </ul>	<ul style="list-style-type: none"> <li>- SASS 94: (Library and Librarian Surveys); characteristics of library and media facilities and services; characteristics of librarians.</li> </ul>	
H. Technology	<ul style="list-style-type: none"> <li>- SASS 88, 91: Number of computer science teachers and courses.</li> <li>- NELS:88: Data in 1988 on computer availability at school and on student computer use at home.</li> <li>- CPS 84, 89: Data on computer use in home and at school/work, every 5 years.</li> </ul>	<ul style="list-style-type: none"> <li>- SASS 94: offerings and enrollments in 7th and 8th grade computer classes; availability and use of computers in libraries and media centers.</li> <li>- If funded, ECLS will collect data similar to NELS:88 beginning in 1996 for elementary schools.</li> </ul>	

CCD - Common Core of Data = Grades PK to 12 (universe)  
 CPS - Current Population Survey = Children aged 3 and above (sample of households)  
 ECLS 96 - Proposed Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
 FRSS - Fast Response Survey System (sample)  
 NAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 NELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 NIES 91 - National Household Education Survey of 1991 = Grades K to 12 (sample)  
 PSS - Private School Survey = Grades K to 12 (universe)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)  
 TFS - Teacher Followup Survey = Grade K to 12 (sample)

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**CHART I. INSTITUTIONS AND THEIR CHARACTERISTICS**

	Continuing Data Collections	Planned New Initiatives	Gaps
I. Availability of nutrition and health care.	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on availability of diagnostic and prescriptive services and number of students served. Number of students receiving free or reduced price lunch.</li> <li>- NELS:88; Participation in free lunch programs.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to NELS:88 beginning in 1996 for elementary schools. The survey will also collect information on health and nutrition.</li> </ul>	<ul style="list-style-type: none"> <li>- SASS; There is an increasing variety of nutrition and health care services being offered in schools, and the current data collected are limited.</li> </ul>

CCD - Common Core of Data = Grades PK to 12 (universe)  
 CPS - Current Population Survey = Children aged 3 and above (sample of households)  
 ECLS 96 - Proposed Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
 FRSS - Fast Response Survey System (sample)  
 NAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
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 SASS - Schools and Staffing Survey = Grades K to 12 (sample)  
 TFS - Teacher Followup Survey = Grade K to 12 (sample)

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## II. FINANCE

The "school effects" literature has provided little evidence that simply increasing school resources will affect students' achievement test scores. The importance of money spent on facilities, materials, and staffing must be balanced against the influence of home environment and background. Yet the availability of adequate resources is an enabling condition for classroom processes; it influences whether students and teachers are disposed to engage in productive teaching and learning. Because resource levels set the limits within which schools operate, it is important to collect basic information on the financial support provided to schools. By the same token, it is important to understand the choices that states and local school districts make in deciding how to spend limited financial resources.

### Continuing Data Collections and New Initiatives

Prior to Fiscal Year 1989 (FY 89), the Common Core of Data collected highly aggregated data on revenues and expenditures in public education from the states. These state financial data were obtained from audited state administrative records, causing them to lag one year behind other CCD data. The CCD redesign of the state-level school finance data collection in FY 89 yielded more detail regarding revenues and expenditures for elementary and secondary education. Specifically, NCES can now report state-level expenditures for instruction, student support services, administration, operation and maintenance, and student transportation, with detail on salaries, benefits, purchased services, supplies, and equipment. NCES revenue data now include local property, sales, and income taxes, student fees, and revenues from the federal government (both through the state and directly to the school district). In addition, NCES has a finance data collection that enables the early release of pre-audited current year state education revenues and expenditures, and provides estimates for the upcoming two years. The uniformity of reporting of financial statistics across states has also greatly improved in recent years. Currently, all but nine states report financial statistics in a uniform manner, through adoption of NCES accounting standards or through a "crosswalk" that NCES developed to enable states to convert their accounting system to common national definitions. And those nine states are beginning to make changes in order to achieve more uniformity with NCES accounting standards.

Public school district level financial information is once again being sponsored and disseminated by NCES after almost a decade's lapse. Beginning in school year 1989-90 (and again in 1991-92), NCES is joining with the established Bureau of the Census F-33 survey to report financial data from state administrative records for school districts. These data permit the assessment of revenue and expenditure equity for types of school districts within states, as well as interstate revenue and expenditure equity. And in 1993, the NCES Census Mapping Project will be completed. This project will permit 1990 decennial Census population data to be added to the 1989-90 school district financial collection for all public school districts in the nation.

NCES does not currently collect revenue and expenditure data from elementary and secondary private schools in a comprehensive manner. Limited information is currently collected in the SASS and the Private School Survey (PSS). In the SASS, the highest annual tuition charged by the school (excluding boarding fees) can be related to other SASS data, including school, principal/head, and teacher data. The utility of these data is limited for financial analysis, however, as they are only one component of the revenue and expenditure picture for private schools.

## Gaps

Some gaps remain in public school financial statistics. NCES cannot report expenditures by level (elementary and secondary). Furthermore, school finance data are not currently available below the school district level. The question of links between fiscal health and student achievement is particularly difficult to answer because national student-based surveys such as NELS:88 and NAEP lack financial data. In addition, while total employee benefit expenditures by states and school districts can be reported, the mix of employee benefits cannot. The extent to which benefit expenditures go to group life or health insurance, social security contributions, retirement contributions, tuition reimbursement, unemployment compensation, or workmen's compensation cannot be determined from current data collections.

Another gap in financial statistics is the lack of information on expenditures for specific instructional programs. Some states can report restricted expenditures for special student programs and services such as special education, compensatory education, bilingual education, and gifted and talented education. At this time, however, data are not available on the amount of money districts spent on specific instructional programs for these student populations, or on other instructional programs such as those funded by Chapter One or the Eisenhower Program for mathematics and science education. The collection of these data would require a survey of school districts, whose files contain detail on expenditures for specific instructional programs.

Comprehensive data on private school revenues and expenditures are missing from national data collections. This gap in financial data for an important segment of American education was addressed in the report of the National Education Statistics Agenda Committee (NESAC) of the National Forum on Education Statistics, "NCES should expand the Federal Government's survey of private schools to include resource information. Wherever feasible, NCES should report private-school resource data from its surveys on a State-by-State basis."<sup>12</sup> NCES staff have met annually since 1987 with a group of private school representatives (including all of the major religious and nonreligious private school associations) and several discussions have revolved around the feasibility of collecting fiscal data from their constituents. Talks with private school representatives are continuing in this area.

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<sup>12</sup>A Guide to Improving the National Education Data System, October 1990.

## **Finance Bibliography**

### **Released Reports**

E.D. Tabs - Public Elementary and Secondary State Aggregate Data, by State, for School Year 1989-90 and Fiscal Year 1989 (NCES 91-035) (also available for earlier years)

Early Estimates - Public and Private Elementary and Secondary Education Statistics: School Year 1991-92 (NCES 92-032) (also available for earlier years)

E.D. Tabs - Characteristics of Private Schools: 1987-88 (NCES 90-080)

E.D. Tabs - Detailed Characteristics of Private Schools and Staff: 1987-88 (NCES 92-079)

Private Schools in the United States: A Statistical Profile, with Comparisons to Public Schools (NCES 91-054)

### **Reports in Preparation**

E.D. Tabs - Private School Universe Survey: 1989-90

Private Schools 1986-1990: A Data Synthesis

E.D. Tabs - Public School Education Financing for School Year 1989-90

American Public Education Finance in 1990



# CHART II. FINANCE

	Continuing Data Collections	Planned New Initiatives	Gaps
A. Expenditures	<ul style="list-style-type: none"> <li>- CCD 87-91; State-level expenditures for instruction, student support services, administration, operation and maintenance, and student transportation, with detail on salaries, benefits, purchased services, supplies and equipment. Additional detail permits a knowledge of school renovation and construction.</li> <li>- Census Bureau F-33 Survey; Revenue and expenditure data for types of school districts within states, as well as inter-state revenue and expenditure data.</li> </ul> <p>For information on teachers and principals salaries and benefits, see the section entitled "staffing."</p>		<ul style="list-style-type: none"> <li>- MCEs does not currently collect information on private school expenditures.</li> <li>- MCEs cannot report expenditures by level of school. Few districts can report expenditures for programs. Although total employee benefit expenditures by state and school district can be reported, the mix of employee benefits offered by employers cannot. Data are not available on which states or school districts provide group insurance, social security contributions, retirement contributions, tuition reimbursement, unemployment compensation, workmen's compensation, or unused sick leave payments. Data on state education agency expenditures for maintaining elementary and secondary education are also not available.</li> </ul>
B. Revenues by source	<ul style="list-style-type: none"> <li>- CCD 87-89; Revenues by source, local, state, and Federal.</li> <li>- Census Bureau F-33 Survey; School district revenues by source.</li> <li>- PSS 89, 92; Private school highest annual tuition charged by affiliation, by school characteristics.</li> <li>- SASS 88, 91; Private school highest annual tuition can be analyzed in conjunction with other SASS data on schools, teachers, or principals/heads.</li> <li>- CPS; Private school tuition collected every three years.</li> </ul>		<p>Except for tuition information, there is no information available on private school finance--revenues or expenditures.</p>

CCD - Common Core of Data = Grades PK to 12 (universe)  
 CPS - Current Population Survey = Children aged 3 and above (sample of households)  
 F-33 - Census Bureau F-33 Survey = Elementary/secondary school district fiscal data  
 PSS - Private School Survey = Grades K to 12 (universe)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)

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### III. STAFFING

The quality of the educational experience of students in grades K through 12 is profoundly affected by the school staff that they encounter through their elementary and middle school years. While instructional staff have a preeminent role in academic teaching, administrators and non-instructional staff make significant contributions to the social and emotional development of students. The characteristics of teachers and principals (age, sex, ethnic background, educational preparation, values, attitudes, commitment, etc.) are part of the raw materials for school processes and outcomes. It is important to remember, however, that their effectiveness is moderated by working conditions and administrative constraints. Finally, the quality of instructional staff is affected by the relationship between the supply of and the demand for teachers. This relationship can result in staffing surpluses or shortages, and may, in turn, influence educational outcomes.

#### Continuing Data Collections and New Initiatives

The leadership role of the principal is critical to student outcomes, as it influences the school environment and teacher attitudes. The characteristics and behaviors of school principals have direct importance for the teacher workplace and school effectiveness. Yet until the first administration of the Schools and Staffing Survey in 1987-88, no national data had been collected on the backgrounds, career histories, current responsibilities, and future plans of school principals. Even prior national surveys of schools and teachers (e.g. 1984-85 Public School Survey, 1985-86 Private School Survey) had not provided information on the administrative sector of the educational workforce. SASS will be conducted every three years and will provide data that permit analysis of the principal workforce and how it changes over time. The hierarchical nature of the SASS sample also allows this information to be analyzed in conjunction with school and district characteristics, policies, and practices, as well as with teacher characteristics, attitudes, and plans.

At the heart of the educational system is the classroom in which students and teachers interact to effect learning. And the quality of this interaction is greatly affected by the qualities (characteristics, qualifications, attitudes) of the teachers assigned to students. Reflecting the importance of teacher data is the fact that every elementary/secondary institution-based survey includes data on teachers. Information on teachers in the elementary/secondary education data collection system runs the gamut from basic counts of full-time-equivalent teachers in the CCD to in-depth data on teacher background, preparation, assignments, attitudes, and plans in the SASS. The link between teacher characteristics and student outcomes can be explored directly in the elementary/secondary longitudinal studies such as NELS:88.

The collection of data on teacher supply and demand was a primary focus of the elementary/secondary data collection system redesign which created the Schools and Staffing Survey. Data from many levels of the educational system contribute to our

understanding of the factors that affect the continuing and new supply of teachers, as well as the factors that affect the demand for those teachers. Beginning in 1987-88, SASS collected information from these various levels, including school and district personnel policies (salary, retirement, hiring practices), school characteristics (size, locale, pupil/teacher ratio), and, of course, teacher characteristics (age, experience, qualifications, career history, future plans to remain in or leave teaching). And in the 1988-89 Teacher Followup Survey, NCES initiated a collection of followup data on a sample of teachers from SASS in order to calculate behavior-based teacher attrition rates and to assess the reasons teachers leave teaching and their plans to return.

## Gaps

Perhaps the most important data gap in understanding how teachers affect the educational process is the lack of a good definition of "teacher quality." Although variables presumed to be indicative of teachers' competence (e.g., years of experience, academic ability, degree level, certification) have been examined for their relevance to student learning, the results of such studies have been equivocal. The National Education Statistics Agenda Committee (NESAC) of the National Forum on Education Statistics has recommended that OERI fund special studies to improve the measurement of, among other things, "important school processes including...methods of training teachers and assessing their competence."<sup>13</sup>

Another gap also relates to the assessment of teacher quality. In-service education serves as a vehicle to update teachers' knowledge, improve teaching techniques, or to retrain teachers to teach special student populations or shortage fields. Our knowledge of the content and effectiveness of in-service education, however, is scant. Although the 1991-92 SASS (field test) and the first-followup of NELS:88 feature extensive questions on the types of in-service education taken by teachers, mail/telephone survey techniques can only scratch the surface of the content of these courses and their effects on teaching practice and student outcomes.

Finally, detailed characteristics of non-instructional staff such as guidance counselors<sup>14</sup>, vocational counselors, curriculum specialists, social workers, and health professionals are also missing from the elementary/secondary data collection system. While numbers of non-instructional staff are available from both the CCD and SASS, information on their demographic characteristics, education, experience, assignments, and working conditions are not currently available. Special surveys of these types of staff could occasionally be conducted in conjunction with the Schools and Staffing Survey, as will be done in 1994 for librarians.

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<sup>13</sup>A Guide to Improving the National Education Data System, October 1990.

<sup>14</sup>The National Longitudinal Survey of 1972 (NLS-72) did include a questionnaire for school counselors, but this has not been done since.

## **Staffing Bibliography**

### **Released Reports**

E.D. Tabs - Public Elementary and Secondary Schools and Agencies in the United States and Outlying Areas: School Year 1989-90 (NCES 91-033) (also available for earlier years)

E.D. Tabs - Public Elementary and Secondary State Aggregate Data, by State, for School Year 1989-90 and Fiscal Year 1989 (NCES 91-035) (also available for earlier years)

Directory of Public Elementary and Secondary Education Agencies, 1989-90 (NCES 91-039) (also available for earlier years)

Characteristics of the 100 Largest Public Elementary and Secondary School Districts in the U.S.: 1988-89 (NCES 91-062)

Early Estimates - Public and Private Elementary and Secondary Education Statistics: School Year 1991-92 (NCES 92-032) (also available for earlier years)

Schools and Staffing in the United States: A Statistical Profile, 1987-88 (NCES 92-120)

E.D. Tabs - Selected Characteristics of Public and Private School Administrators (Principals) (NCES 90-085)

E.D. Tabs - Selected Characteristics of Public and Private School Teachers (NCES 90-087)

E.D. Tabs - Aspects of Teacher Supply and Demand in Public School Districts and Private Schools (NCES 91-133)

E.D. Tabs - Characteristics of Stayers, Movers, and Leavers: Results from the Teacher Followup Survey, 1988-89 (NCES 91-128)

E.D. Tabs - Detailed Characteristics of Private Schools and Staff: 1987-88 (NCES 92-079)

A Profile of Schools Attended by Eighth Graders in 1988 (NCES 91-129)

E.D. Tabs - A Profile of American Eighth Grade Math and Science Instruction: NELS:88 Teachers, Schools, and Students (NCES 92-486)

Conference Paper - Teacher Training, Certification, and Assignment.

Conference Paper - Characteristics of Public and Private School Teachers.

Conference Paper - Characteristics of Mathematics and Science Teachers.

Conference Paper - Moonlighting Among Public and Private School Teachers.

Conference Paper - Teacher Turnover: Patterns of Entry to and Exit From Teaching.

Conference Paper - Highlights of Minority Data From the Schools and Staffing Survey, 1987-88.

Conference Paper - Characteristics of Bilingual Education and English as a Second Language Teachers.

Conference Paper - Teacher Salaries: Comparing States After Adjusting for Teacher Experience and Education.

Conference Paper - Teacher Incentive Research With SASS.

Conference Paper - What are the Characteristics of Principals Identified as Effective by Teachers?

### **Reports in Preparation**

Schools and Staffing in the United States: A Statistical Profile, 1990-91

Teachers in the United States: 1987-88

Teacher Supply and Demand

Teacher Training, Certification, and Assignment in Public Schools

# CHART III. STAFFING

	Continuing Data Collections	Planned New Initiatives	Gaps
<b>A. Principals/Administrators</b>			
1. Characteristics	<ul style="list-style-type: none"> <li>- CCD 86 through 92; Counts of school and district administrators by state.</li> <li>- SASS 88, 91; Data on age, race/ethnicity, sex.</li> <li>- NAEP; Collects information about background and characteristics of school principals</li> </ul>	<ul style="list-style-type: none"> <li>- CCD 93; District level count of school administrators.</li> </ul>	<ul style="list-style-type: none"> <li>- SASS; Information on marital and family status may be helpful in predicting job mobility.</li> </ul>
2. Qualifications/experience	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on degrees earned, other job-related training, and education and non-education experience.</li> </ul>		<ul style="list-style-type: none"> <li>- SASS; A measure of quality of educational and organizational leadership is lacking.</li> </ul>
3. Salary and benefits	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on annual salary, months employed per year, and benefits received.</li> </ul>		<ul style="list-style-type: none"> <li>- SASS; Information on salary schedules for school administrators is lacking.</li> </ul>
4. Attrition	<ul style="list-style-type: none"> <li>- SASS 91; Data on plans to remain as principal.</li> </ul>		<ul style="list-style-type: none"> <li>- SASS; Information on administrator separation and attrition is not collected, including details of reasons for moving or leaving.</li> </ul>
5. Locus of control	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on administrators' ratings of amount of influence various groups or persons exercise over selected school activities.</li> </ul>		

CCD - Common Core of Data = Grades PK to 12 (universe)  
 ECLS 96 - Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
 FRSS - Fast Response Survey System (sample)  
 NAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 NELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 NHES 91 - National Household Education Survey of 1991 = Grades K to 12 (sample)  
 SASS - Schools and Staffing Survey = Current and former teachers (sample)  
 TFS - Teacher Followup Survey = Current and former teachers (sample)

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# CHART III. STAFFING

	Continuing Data Collections	Planned New Initiatives	Gaps
6. School climate	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on administrators' ratings of the seriousness of school problems, including alcohol and drug use, student behavior, discipline, absenteeism.</li> <li>- FRSS 91; school policies and curriculum re: drug, alcohol, and student discipline; teachers' perceptions of problems re: drug alcohol and student discipline; incidence of such problems.</li> <li>- MAEP; Report on school problems.</li> </ul>	<ul style="list-style-type: none"> <li>- SASS; The item content will be modified as new issues emerge.</li> </ul>	
B. Teachers			
1. Demographic/economic characteristics	<ul style="list-style-type: none"> <li>- CCD 86 through 92; FTE counts of teachers by school.</li> <li>- SASS 88, 91; Data on age, race/ethnicity, sex, marital status, dependents, annual family income.</li> <li>- NELS:88; Information on teacher demographics.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to NELS:88 beginning in 1996 for teachers at the kindergarten and fourth grade levels.</li> </ul>	

CCD - Common Core of Data = Grades PK to 12 (universe)  
 ECLS 96 - Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
 FRSS - Fast Response Survey System (sample)  
 MAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 NELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 NHES 91 - National Household Education Survey of 1991 = Grades K to 12 (sample)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)  
 TFS - Teacher Followup Survey = Current and former teachers (sample)

# CHART III. STAFFING

	Continuing Data Collections	Planned New Initiatives	Gaps
2. Qualifications/ certification/experience	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on education background of teachers, including all degrees, degree subjects and years, coursework in teaching fields, certification status in main and other teaching fields, full- and part-time teaching experience in public and private schools.</li> <li>- WELS:88; Major and minor degree fields, certification, years of teaching, as well as teaching in and out of field. Teaching practices, time on task, opportunity to learn items.</li> <li>- NAEP; Teachers background and training and procedures used class by class for each class which contains a student assessed by NAEP.</li> <li>- TFS 89; New degrees earned in followup year. Change in certification status.</li> </ul>	<ul style="list-style-type: none"> <li>- SASS 94; Additional information on types of certification will provide data on the prevalence of alternative certification.</li> <li>- If funded, ECLS will collect data similar to WELS:88 beginning in 1996 for teachers of sampled kindergarten and fourth grade students.</li> </ul>	<ul style="list-style-type: none"> <li>- SASS; This issue area is lacking a good definition and measure of "teacher quality."</li> </ul>
3. Assignments	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on teacher's main assignment field, other main assignment field, and best qualified field teachers of departmentalized classes fill out a matrix indicating the subject of each class that they teach, including the number, grade level, and academic achievement level of the students in each class.</li> <li>- WELS:88; Teachers are asked how teaching assignments are distributed/assigned.</li> <li>- TFS 89; Main assignment field.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to WELS:88 beginning in 1996 for teachers of sampled kindergarten and fourth grade students.</li> </ul>	

CCD - Common Core of Data = Grades PK to 12 (universe)  
 ECLS 96 - Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
 FRSS - Fast Response Survey System (sample)  
 NAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 WELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 NHES 91 - National Household Education Survey of 1991 = Grades K to 12 (sample)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)  
 TFS - Teacher Followup Survey = Current and former teachers (sample)



CHART III. STAFFING

	Continuing Data Collections	Planned New Initiatives	Gaps
4. Working Conditions - Access to basic classroom resources and supporting resources. - Influence over textbook selection.	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on teacher's perceived influence over classroom policies (e.g. textbook selection and teaching techniques) and school policies (e.g. discipline, tracking). Opinion questions on teacher's perceptions of adequacy of resource availability. Data on class size for both self contained and departmentalized classrooms.</li> <li>- NELS:88; Teachers are asked about textbook selection including title, author, publisher and edition for all courses taught.</li> <li>- TFS 89; Current and former teachers' opinions of the teachers profession vs. other professions.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to NELS:88 beginning in 1996 for teachers of sampled kindergarten and fourth grade students.</li> </ul>	
5. In-service training	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on whether teachers have participated in any in-service training and the purpose for which the training was taken.</li> <li>- SASS 91; Data on support provided for new teachers (mentoring).</li> <li>- NELS:88; Kinds of support services, in-service workshops and mentoring activity is collected from teachers.</li> </ul>	<ul style="list-style-type: none"> <li>- SASS 94; Extensive questions on the types, lengths, and effects on the teacher of in-service or professional development programs are being field tested and may appear in the 93 SASS.</li> <li>- If funded, ECLS will collect data similar to NELS:88 beginning in 1996 for teachers of sampled kindergarten and fourth grade students.</li> </ul>	<ul style="list-style-type: none"> <li>- SASS; We currently cannot measure the content of in-service training courses, how it is applied in the classroom, the effect on student outcomes, how teachers reconcile contradictory information given in different in-service courses.</li> </ul>
6. Salary/benefits/retirement	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on base teaching salary, other school and nonschool salary, income-in-kind, family income, benefits, plans to retire.</li> <li>- TFS 89; Current and former teachers' salaries in followup year.</li> </ul>	<ul style="list-style-type: none"> <li>- SASS 94; Additional questions on retirement plans are being field tested.</li> </ul>	<ul style="list-style-type: none"> <li>There is not currently a way to compare salaries for different locales for which the cost of living differs. However, NCES has recently funded a study by Stephan Barro which evaluates differences in teachers salaries by state.</li> </ul>

CCD - Common Core of Data = Grades PK to 12 (universe)  
 ECLS 96 - Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
 FRSS - Fast Response Survey System (sample)  
 NAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 NELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 NHES 91 - National Household Education Survey of 1991 = Grades K to 12 (sample)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)  
 TFS - Teacher Followup Survey = Current and former teachers (sample)

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# CHART III. STAFFING

	Continuing Data Collections	Planned New Initiatives	Gaps
7. Attitudes	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on perceptions and attitudes toward teaching, perceived seriousness of problems in school, ratings of importance of various educational goals, and ratings of amount of control/influence over discipline policy, content of in-service training programs, ability grouping of students, curriculum, and other planning and teaching activities.</li> <li>- NELS:88; Attitude data on a wide range of topics including homework, discipline, grading, school safety are collected.</li> <li>- FRSS 91; Teachers' perceptions of problems re: drug alcohol and student discipline; incidence of such problems.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to NELS:88 beginning in 1996 for students, parents, teachers, and principals.</li> <li>- SASS; The item content will be modified as new issues emerge.</li> </ul>	
8. Supply and demand	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on number of teachers, certified teachers, teaching positions, continuing teachers, new hires, salary schedules, hiring incentives, hiring and retirement policies, difficulty in filling vacancies.</li> <li>- TFS; Data on attrition by field, by teacher and school characteristics; reasons for leaving/moving; comparisons of teaching with other professions, plans to return to teaching.</li> </ul>	<ul style="list-style-type: none"> <li>- SASS 94 (pretest); A form is being field tested to try to obtain, by field, estimates of the number of teachers, number of new hires, number of certified new hires, number of vacant and/or withdrawn positions, and number of layoffs.</li> <li>- TFS; A cohort of teachers may be followed longitudinally every two years for at least 8 years in order to follow flows in and out of the teaching profession.</li> </ul>	<ul style="list-style-type: none"> <li>- SASS; At present, there is little information collected on the reserve pool.</li> </ul>
C. Other Support Staff			
1. Instructional	<ul style="list-style-type: none"> <li>- CCD 86 through 92; State level FTE of aides and library staff.</li> <li>- SASS 88, 91; Data on numbers of full and part-time teacher aides and librarians.</li> </ul>	<ul style="list-style-type: none"> <li>- SASS 94 librarian component has been field tested and includes detailed information about the characteristics of school librarians.</li> </ul>	Detailed characteristics of other support staff.

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 ECLS 96 - Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
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 NELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 NHES 91 - National Household Education Survey of 1991 = Grades K to 12 (sample)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)  
 TFS - Teacher Followup Survey = Current and former teachers (sample)

### CHART III. STAFFING

	Continuing Data Collections	Planned New Initiatives	Gaps
2. Non-instructional	<ul style="list-style-type: none"> <li>- CCD 86 through 92; state level FTE of counselors, school and district support staff.</li> <li>- SASS 88, 91; Data on numbers of full and part-time employees (e.g. guidance counselors, vocational counselors, curriculum specialists, social workers, health professionals).</li> </ul>		Detailed characteristics of support staff.

CCD - Common Core of Data = Grades PK to 12 (universe)  
 ECLS 96 - Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
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 NAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 NELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 NHES 91 - National Household Education Survey of 1991 = Grades K to 12 (sample)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)  
 TFS - Teacher Followup Survey = Current and former teachers (sample)

## IV. CURRICULUM AND COURSE CONTENT

The curriculum of schools--the time and teaching resources devoted to different subject areas--tells a great deal about how time is spent in schools and what we expect students to learn. One of the primary purposes of collecting curriculum information in data systems for elementary schools is to compare the real or "implemented" curriculum with the written or "stated" curriculum and establish the links between the implemented curriculum and student achievement. The real curriculum refers to what is actually taught in classrooms: content and topic coverage, time and emphasis devoted to different subject areas, course taking, and the context in which instruction occurs. The written curriculum shows what the individual school or district plans on teaching its students, but may or may not reflect what is actually being taught in the classroom. An important focus of data collection efforts in this area, therefore, is obtaining school and individual teacher reports on what is actually being taught to students to inform the analysis of student achievement data.

### Continuing Data Collections and New Initiatives

Although secondary school curriculum data were collected by NCES surveys as early as 1972 (National Longitudinal Survey of 1972 or NLS-72), it was not until 1988 that the National Education Longitudinal Study (NELS:88) began collecting curriculum information for the 8th grade. Both public and private school data (questionnaires and curriculum sensitive cognitive tests in four subject areas) were collected from 25,000 eighth graders in NELS:88. Data were also collected from each student's teachers, school principals and parents. These nationally representative data are extremely powerful analytically. Not only do all the component surveys provide contextual data for the student reports, but they can be linked to the individual student data as well.

The NELS:88 school administrators reported very general information on curriculum and coursetaking including: major program orientation of the school (general academic, science/technology, arts, etc.); minimum academic instruction required of eighth graders in all academic areas; and the availability of gifted and talented programs in major academic areas as well as how students are chosen for these special programs.

The NELS:88 students reported on their course taking patterns and about their competency, interest and grades in their various courses. They reported on their ability grouping in the core subjects, and their enrollment in advanced, enriched or accelerated core courses and their participation in any special programs such as gifted/talented and English as a Second Language. Students also reported on who may have encouraged them to take certain subjects and how they were encouraged.

The NELS:88 teachers provided in-depth reports of curriculum and course emphases, as well as descriptors of course content and classroom characteristics. Basic descriptors of all courses taught by teachers in the NELS:88 sample included title,

achievement level of students, textbook choice and percent of textbook covered, use of instructional materials and amount of time spent per week using different forms of class instruction.

Additionally, in-depth teacher descriptions of the eighth grade core curriculum were collected in the four subject areas of English, mathematics, history and science. Curriculum emphasis in **English** is reported in the areas of: grammar, literature, composition, reading and spelling and are reported as major topics, minor topics, review topics or non-existent. Curriculum emphasis in **mathematics** is reported in the areas of: common fractions, decimal fractions, ratio and proportion, percent, measurement, geometry, algebra, integers, probability and statistics, and problem solving. Access to and time usage of calculators is also collected. **Science** curriculum emphasis is reported in the areas of: plants, animals, human biology, genetics, personal health, earth science or geology, weather, astronomy or space, electricity or magnetism, mechanics, heat, optics, chemistry, atomic theory, environmental science, and oceanography. As in the other core subjects, topics are described as major, minor, review topics or non-existent. In addition to topical coverage, other classroom indicators such as use of science experiments by teachers and students and the access, and quality of science equipment are also reported. **History** curriculum is reported in the areas of state history, U.S or American history, world or western history, civics/government, geography, current events, ethics and economics. All topics are rated by teachers as major, minor, or review topics.

In the Fall of 1992, NCES collected high school transcripts from students who participated in the NELS study. This transcript study will provide an in-depth look at the coursetaking patterns of students who were eighth graders in 1988.

At a more general level, SASS 88 and SASS 91 reported on subjects taught, the number of students taught by subject and the number of periods taught by subject for departmentalized classes, and on the amount of time spent per week teaching core subjects for self-contained classes. Questions on offerings and enrollments in 7th and 8th grade mathematics and science are also being field tested for the 1994 SASS.

## Gaps

Although detailed information for four major core curriculum areas were collected for eighth graders by NELS:88 and in a more general way by SASS, it is important for NCES to plan studies that collect information on curriculum as early as kindergarten when 98 percent of students begin their formal education. It is equally important to collect this same type of information for students in the primary grades and middle schools, as well as junior high schools. Only by studying the real K through 12 curriculum as students progress through the school system can an assessment be made as to what works and thus what should be offered. Even transcript collections have been unable to obtain data on student coursework at the elementary and middle/junior high

levels. The computerized student record system currently under development with NCES funding could be used to compile course taking patterns for specific grades.

As the National Forum on Education Statistics<sup>15</sup> and the National Goals Panel have already suggested, NCES should regularly collect and report data at the national level on topic coverage in high-priority subjects such as math and science. In addition, NESAC recommended that curriculum information be collected more frequently than currently planned for longitudinal studies of students.

Another recommendation is that the next longitudinal study begin at an earlier age so that curriculums can be studied as they interact with the family and community experiences of children. As part of NCES's long term planning, the next longitudinal study, if funded, will begin with a birth cohort and a kindergarten cohort in 1996. In this report, this proposed study is referred to as the Early Childhood Longitudinal Survey (ECLS).

Finally, links between the rich curriculum data of NELS:88 and the rich contextual school data from SASS cannot be made since there is no overlap in the two samples. Preliminary discussions are underway, however, on the possibility of overlapping school samples of future SASS collections and NELS:98. Links of these types could make the use of both longitudinal and cross-sectional data bases even more powerful in the future.

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<sup>15</sup>A Guide to Improving the National Education Data System, October 1990.

## **Curriculum and Course Content Bibliography**

### **Released Reports**

A Profile of The American Eighth Grader (NCES 90-458)

A Profile of Schools Attended by Eighth Graders in 1988 (NCES 91-129)

E.D. Tabs - National Education Longitudinal Study of 1988: Eighth Grader's Reports of Courses Taken during the 1988 Academic Year by Selected Student Characteristics (NCES 90-459)

E.D. Tabs - The Tested Achievement of The National Education Longitudinal Study of 1988 Eighth Grade Class (NCES 91-460)

E.D. Tabs - A Profile of American Eighth Grade Math and Science Instruction: NELS:88 Teachers, Schools, and Students (NCES 92-486)

Participation in Secondary Vocational Education, 1982-87 (NCES 91-667)

Technical Report - Psychometric Report for the NELS:88 Base Year Test Battery (NCES 91-468)

Characteristics of At-Risk Students in NELS:88 (NCES 92-042)



# CHART IV. CURRICULUM AND COURSE CONTENT

	Continuing Data Collections	Planned New Initiatives	Gaps
A. Offerings and enrollments	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on subjects taught.</li> <li>- NELS:88; Teachers responded to a series of questions on course content coverage and major topical areas covered in courses. Teachers provide data for the specific topical areas that are presented to students in the four core areas of math, English, science and history.</li> <li>- NAEP; Teacher reports on specific topical areas taught in class, as well as teaching techniques used. Policies about tracking, curriculum, testing practices and use.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to NELS:88 beginning in 1996 for elementary schools. The exact content of a teacher survey for elementary schools in ECLS 1996 is not set, but the teachers will definitely be surveyed in such a study.</li> <li>- SASS 94; Questions on offerings and enrollments for 7th and 8th grade math and science are being field tested.</li> <li>- NELS:88 and NSF are supporting a RAND Corporation study which is using 12th grade Teacher Questionnaire data and student coursework examples to validate teacher reports on their classroom instruction and emphasis. This data collection will develop and sustain a routine system of indicators to monitor curriculum trends in the schools.</li> </ul>	Information on course offerings and enrollments for grades K-8. (Gap will be partially filled by activities listed in planned data collections.)

ECLS 96 - Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
 FRSS - Fast Response Survey System (sample)  
 NAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 NELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)

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CHART IV. CURRICULUM AND COURSE CONTENT

	Continuing Data Collections	Planned New Initiatives	Gaps
B. Exposure to subject matter	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on numbers of hours per week spent teaching in selected subject matter areas, number of students taught by subject, number of periods taught by subject.</li> <li>- FRSS 91; Number of hours education on drug abuse is taught for each grade.</li> <li>- NELS:88; Teachers responded to in-depth lists of "opportunity to learn items" for the courses that they taught to NELS eighth graders.</li> <li>- NAEP; Teachers report students' exposure in curriculum to topics assessed.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to NELS:88 beginning in 1996 for elementary schools. Have not planned specifics of teacher component to ECLS 96, but course coverage would certainly seem like an important topic.</li> </ul>	The linking of the curriculum information that we have in NELS:88 with the rich contextual school data in SASS. The possibility of overlapping school samples of future SASS collections and NELS:98 is being discussed.
C. Time allocated to different subjects	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on hours per week teachers spend teaching in selected subject matter areas.</li> <li>- NELS:88; Teachers report on the amount of emphasis and time they give to different teaching techniques (whole group instruction, labs, etc.) as well as to the different topical areas in the courses they teach (grammar, literature, composition, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to NELS:88 beginning in 1996 for children in grades K and 4.</li> </ul>	

ECLS 96 - Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
 FRSS - Fast Response Survey System (sample)  
 NAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 NELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)

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## V. STUDENTS

Why do some students succeed in school while others fail? How is success or failure related to family and community characteristics as opposed to school resources and opportunity to learn? In order to examine questions such as these, a plethora of information on students' in-school and out-of-school experiences must be collected. If growth or change is to be measured, information must be collected from many sources (e.g., students, parents, teachers, principals, existing records) over several points in time.

### Continuing Data Collections and New Initiatives

Although basic demographic information has been collected in past NCES surveys of secondary level students throughout the 1970s (NLS-72) and early 1980s (High School & Beyond), it was not until 1988 that the National Educational Longitudinal Survey (NELS:88) began collecting this information at the elementary level (eighth grade). The National Household Education Survey (NHES) followed in 1991 with a data collection centered on the pre-school experiences and background characteristics of three-to eight-year-olds using the parents as respondents. The Schools and Staffing Surveys (SASS 88 and 91) also reported student information in the aggregate using principals and teachers as respondents; SASS does not report information on individual students as it is mainly a study of schools and their staffs at this time. The SASS student records survey, pretested in 1991, collected demographic and program participation data on a sample of students for teachers in SASS. In 1994, the SASS student records survey is planned for a sample of Indian students. The Common Core of Data also reports some aggregate information on the racial/ethnic composition of students for most states, and it continuing to expand the information that it collects in this area.

Both NHES 91 and NELS:88 report data on demographic characteristics of students including age, race/ethnicity, SES, parent education and home language. If combined with achievement data, many connections between demographics and outcomes can be analyzed. For instance, NELS:88 data can show the relationship between students in different SES and racial/ethnic groups and their level of achievement in core academic subjects. NAEP also contains student background information which can be analyzed in conjunction with achievement in grades 4, 8 and 12 in certain subject areas.

Although most students succeed in school, a growing number have been identified as being "at risk." Past research has shown the relationship between "at risk" factors of children and how well they achieve in school and later in life. NELS:88 can help look at risk issues because the data collection begins at eighth grade, has two year follow-ups, and has an oversampling of language minorities and limited English proficient (LEP) students. Using the NELS:88 data, NCES has tabulated six categories of student or family behavior that put students "at-risk" of achieving below their actual potential, failing in school, or dropping out: 1) single parent family, 2) family income less than \$15,000, 3) home alone more than three hours a day, 4) parents have no high school

diploma, 5) student has a sibling who dropped out, and 6) limited-English proficiency. NHES collected data on birth weight of children as well as family income, parental education and minority status.

The rate at which students drop out of school is examined closely by educational policy makers. In order to fully understand who is dropping out, however, data are needed to track student movement in and out of schools as students drop out, stop out, and re-enter school. NCES dropout reporting presently relies on two main data sources for dropout statistics--both reporting on age groups outside the focus of this report. NCES uses data from the annual Bureau of the Census "Current Population Survey" October education supplement to report nationally representative dropout rates for young adults aged 15 - 24 in the annual fall report to Congress.<sup>16</sup> NELs:88 parent and school data report student status at the 8th and 10th grade level to determine dropping out between the 8th and 10th grade. No dropout data before eighth grade have been collected by NCES. In 1993, however, the Common Core of Data (CCD) Survey will collect public school district-level counts of dropouts by sex and racial/ethnic status for grades 7 through 12.

An effective school assumes that its students have a positive educational outlook--that students take school seriously and arrive prepared to learn. Teachers and administrators in SASS, as well as the teachers, administrators, students and parents of NELs:88 provide data on attitudes and perceptions about school climate, including school problems, helpfulness of teachers and counselors, academic rigor of the school, and how much the students actually liked school. The proposed ECLS may collect these data in 1996 for grades K and 4. NCES also collects data that enable us to look at students' attentiveness in class, students' preparedness when they come to class, student boredom in class, student absenteeism and level of student disruptions in class, and the degree to which students report that class disruptions by other students get in the way of their learning. It is clear from the data now available that student attitudes are directly affected by school climate and vice versa.

Educational research has shown that parental involvement is one of the keys to student success in school and that effective schools are ones that involve parents in their children's learning and school life. The only current elementary data collected from parents on their interaction and support for education is at the eighth grade level in the NELs:88 parent survey. The SASS obtains teachers' perceptions of the degree of parental support for education. The proposed ECLS may collect data in 1996 for grades K and, possibly, 4 and these students will be followed as they progress through school. NELs:88 data report on parent expectations for their children's schooling including grades, homework and higher education as well as parental willingness to pay for their children's current and future education. Data on how much time parents spend

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<sup>16</sup>Dropout Rates in the United States: 1990

discussing school and helping children with their schoolwork are reported as well as the percentage of parents who attend school meetings, visit their children's classes, talk to school officials about their children's academic program, and belong to a parent-teacher organization.

A common indicator of educational disadvantage is being held back, or repeating a grade, in school. The NELS:88 parent survey collected retrospective data on grade retention beginning with kindergarten. NHES 91 collected retrospective data back through kindergarten on retention for grades K through 3. NHES 93 will once again collect this information for children in grades K through 3. More study is needed on the effects of being held back on student achievement.

### Gaps

The most obvious gap in NCES student data is lack of student level data for grades K through 12. Current cross-sectional surveys, while occurring annually or biennially, are geared to provide school, staffing, finance, and enrollment statistics. Student data in these cross-sectional collections are usually in the form of aggregate head counts, expenditures per pupil, and services offered to students at the school level. None of these types of student data, though, is linked to individual student achievement or reports as they are in the typical longitudinal NCES surveys. Historically however, NCES' longitudinal program has centered on secondary and postsecondary data collections which are currently on an eight year cycle. One obvious enhancement to NCES student data collections would be including student level data in the cross-sectional surveys (as has been field tested in the SASS student records survey) and conducting more longitudinal surveys for children in grades K through 12.

As has already been suggested by the National Education Statistics Agenda Committee (NESAC) of the National Forum on Educational Statistics, NCES needs to begin to collect more data on handicapped students by race, type of handicap and how they are served. More regular collections and reporting in the following areas should begin: 1) Limited English Proficiency status; 2) participation in pre-kindergarten educational programs; 3) student "at-risk" behaviors such as drug and alcohol use; and 4) student mobility and stopping in and out of school.

Finally, NESAC has recommended that NCES develop the capacity to collect and report private school student characteristics parallel to those developed for public school students. Additionally, the committee recommended that measures of educational resources, school processes, and students should always have the potential to be disaggregated by race/ethnicity, LEP status, community wealth, and family income. The Census Mapping project in 1993 will provide student, family, and community characteristics that can expand our knowledge of the student's learning environment.

## **Students Bibliography**

### **Released Reports**

A Profile of The American Eighth Grader (NCES 90-458)

E.D. Tabs - National Education Longitudinal Study of 1988: Eighth Grader's Reports of Courses Taken during the 1988 Academic Year by Selected Student Characteristics (NCES 90-459)

E.D. Tabs - The Tested Achievement of The National Education Longitudinal Study of 1988 Eighth Grade Class (NCES 91-460)

E.D. Tabs - A Profile of American Eighth Grade Math and Science Instruction: NELS:88 Teachers, Schools, and Students (NCES 92-486)

Language Characteristics and Academic Achievement: A Look at Asian and Hispanic Eighth Graders in NELS:88 (NCES 92-479)

Characteristics of At-Risk Students in NELS:88 (NCES 92-042)

Dropout Rates in the United States: 1989 (NCES 90-659)

Dropout Rates in the United States: 1990 (NCES 91-053)

Conference Paper - Homework Practices and Risk Formation Process (1991)

### **Reports in Preparation**

NELS:88 A Look at the Parents of Eighth Graders

NELS:88 First Follow-Up Student Profile

NELS:88 First Follow-Up Dropout Descriptive Report

Trend Report-Comparison of NELS:88 and HS&B Students

NELS:88 Transition Patterns Experienced by Students as they move from 8th grade to 10th grade

CHART V. STUDENTS

	Continuing Data Collections	Planned New Initiatives	Gaps
A. Demographic and economic characteristics of family: minority and poverty, parents education	<ul style="list-style-type: none"> <li>- NELS:88; Parental measures include parent's type of work, parent education, total family income as well as family composition, parent's age, race/ethnicity and total yearly educational expenses (Data used to construct SES). Student measures include language use, race/ethnicity, parent education and family composition.</li> <li>- MHES 91; Demographics including age, sex, race, SES, parent education are collected.</li> <li>- CPS; Characteristics of everyone in the household, including age, sex, race/ethnicity, parental education and occupation, family income, SES measure can be constructed.</li> <li>- MAEP; Demographic questions are posed to each student in a grade or age group that help MAEP describe the population that was assessed and to link the sample with the national population.</li> </ul>	<ul style="list-style-type: none"> <li>- MHES 93 for grades K-3.</li> <li>- SASS 94 Indian Student Records Study; Data on students' race/ethnicity, age, sex, grade; grade retention, special needs status (LEP, handicap); participation in special programs. Data linked to teacher characteristics to examine distribution of teacher qualifications across students.</li> <li>- SASS Student Records Study; If funded, data on students' race/ethnicity, age, sex, grade; grade retention, special needs status (LEP, handicap); participation in special programs. Data linked to teacher characteristics to examine distribution of teacher qualifications across students.</li> </ul>	<ul style="list-style-type: none"> <li>- CPS; Consistent trend indicators on education, administered on a regular schedule (i.e., every 2 years) in the October supplement.</li> </ul>

CCD - Common Core of Data = Grades PK to 12 (universe)  
 CPS - Current Population Survey = Children ages 3 and above (sample of households)  
 ECLS 96 - Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
 IAEP - International Assessment of Educational Progress  
 MAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 NELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 MHES 91 - National Household Education Survey of 1991 = Grades K to 12 (sample)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)  
 TFS - Teacher Followup Survey = Current and former teachers (sample)



# CHART V. STUDENTS

	Continuing Data Collections	Planned New Initiatives	Gaps
B. "At risk" population - who are they and where are they	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on minority enrollment, number of students receiving Chapter 1 services, number of students receiving free or reduced price lunches, by type of community (e.g. urban, suburban, rural location).</li> <li>- NELS:88; Data on family SES, single parent family status, low parental education and work experience and having an older sibling who dropped out are collected in the NELS:88 surveys. At risk categories have been developed using the NELS data.</li> <li>- NHES 91 for K-3. Data on family income, birth weight, parental education, and minority status.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to NELS:88 beginning in 1996 for children in elementary schools.</li> <li>- CPS; Language other than English spoken by child and perceived English ability. Whether child 5 or older has ever experienced a disability of 6 month duration or longer that had an effect on their ability to learn.</li> <li>- SASS Student Records Study; If funded, data on risk factors, program participation, and services received.</li> </ul>	
C. Dropouts	<ul style="list-style-type: none"> <li>- Dropout Rates in the United States 1990; Uses data from the annual Bureau of Census "Current Population Survey" to report nationally representative dropout rates among young adults (age 15-24) and cohort dropout rates from NCES longitudinal studies.</li> <li>- NELS:88; Data used to determine dropping out between 8th and 10th grade. No dropout status at eighth grade or earlier was collected by NELS.</li> </ul>	<ul style="list-style-type: none"> <li>- CCD 93; Will collect public school district-level counts of dropouts, by sex and racial/ethnic status, for grades 7 through 12.</li> <li>- NELS:88; Second follow-up data (1992) will be used to determine dropping out between 10th and 12th grade.</li> </ul>	

CCD - Common Core of Data = Grades PK to 12 (universe)  
 CPS - Current Population Survey = Children ages 3 and above (sample of households)  
 ECLS 96 - Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
 IAEP - International Assessment of Educational Progress  
 NAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 NELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 NHES 91 - National Household Education Survey of 1991 = Grades K to 12 (sample)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)  
 TFS - Teacher Followup Survey = Current and former teachers (sample)

CHART V. STUDENTS

	Continuing Data Collections	Planned New Initiatives	Gaps
D. Other characteristics (LEP; Physical/mental disabilities; Other handicapping conditions)	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on numbers of Bilingual, ESL, and handicapped children served.</li> <li>- WELS:88; All 4 components of WELS collected handicapped conditions including LEP status, physical and mental disabilities.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to WELS:88 beginning in 1996 for children in grades K and 4.</li> <li>- SASS Student Records Study; If funded, data on LEP and handicapped conditions.</li> </ul>	<ul style="list-style-type: none"> <li>- SASS: Currently individual student characteristics cannot be linked to teacher, principal, school and school district characteristics. A field test of a student records form was conducted in 1991 and will be evaluated for possible inclusion in SASS.</li> <li>- WELS:88; Although, the most severely handicapped students were initially excluded from the survey; WELS:88 has since gone back to subsample 600 of the initial ineligible students in order to correct for dropout numbers.</li> </ul>
E. Chapter 1 - eligible and served	<ul style="list-style-type: none"> <li>- SASS 88, 91; Data on numbers of students eligible and served.</li> </ul>	<ul style="list-style-type: none"> <li>- TFS 92; SASS 94; Data on number of Chapter 1 teachers.</li> </ul>	

CCD - Common Core of Data = Grades PK to 12 (universe)  
 CPS - Current Population Survey = Children ages 3 and above (sample of households)  
 ECLS 96 - Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
 IAEIP - International Assessment of Educational Progress  
 NAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 WELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 NHES 91 - National Household Education Survey of 1991 = Grades K to 12 (sample)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)  
 TFS - Teacher Followup Survey = Current and former teachers (sample)

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# CHART V. STUDENTS

	Continuing Data Collections	Planned New Initiatives	Gaps
F. Attitudes about schools	<ul style="list-style-type: none"> <li>- NELS:88; Attitudes on perceptions regarding schools, academic rigor, whether the school and teachers were helpful to students, and whether the student liked school.</li> <li>- NAEP; Subject matter background items survey the student's interest in the subject, his or her view about its utility and application to the world they live in, and something about student perceptions about teaching practices. Many subject-matter questions for the lower grade are repeated or carried forward to the next higher grade. Because different committees form these questions from one assessment to another, the background questions posed will differ.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to NELS:88 beginning in 1996 for children in grades K and 4.</li> </ul>	
G. Parents expectations and support for education	<ul style="list-style-type: none"> <li>- NELS:88; Data about parent's expectations for their children's schooling including grades, homework, and higher education. Parents also responded to their willingness to pay for their children's future education and how much time they spent discussing school with their children and helping their children with their school work.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to NELS:88 beginning in 1996 for parents of children in grades K and 4.</li> </ul>	

CCD - Common Core of Data = Grades PK to 12 (universe)  
 CPS - Current Population Survey = Children ages 3 and above (sample of households)  
 ECLS 96 - Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
 IAEF - International Assessment of Educational Progress  
 NAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 NELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 NHES 91 - National Household Education Survey of 1991 = Grades K to 12 (sample)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)  
 TFS - Teacher Followup Survey = Current and former teachers (sample)

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CHART V. STUDENTS

	Continuing Data Collections	Planned New Initiatives	Gaps
H. Participation in Pre-K, and kindergarten education program	<ul style="list-style-type: none"> <li>- CCD 86 through 92; State counts of participation in public Pre-K programs.</li> <li>- SASS 88, 91; Data on number of programs, days per week program is offered, and length of school day for the program.</li> <li>- MHES 91 for grades K through 3; general information about school type, days per week, hours per day, activities and instruction were collected.</li> </ul>	<ul style="list-style-type: none"> <li>- MHES 93 for grades K through 3.</li> <li>- CPS 92; Status of 3-5 year olds not enrolled in school. Data on day care and alternative care.</li> </ul>	<ul style="list-style-type: none"> <li>- CCD; Data are not complete.</li> <li>- SASS; Data on program content and number of participants are lacking. Data are restricted to Pre-K programs in schools with grade 1 or above.</li> </ul>
I. Attendance and retention	<ul style="list-style-type: none"> <li>- WELS:88; Retrospective data back through kindergarten on retention.</li> <li>- MHES 91 for grades K through 3; retrospective data through kindergarten on retention.</li> </ul>	<ul style="list-style-type: none"> <li>- MHES 93 will collect for grades K through 3.</li> <li>- CPS 92; Retrospective data on grade retention for children in household.</li> </ul>	
J. Community background characteristics	<ul style="list-style-type: none"> <li>- CCD 86 through 92; A locale code is assigned to each school on the CCD file. There are 7 levels of locale from rural to inner-city of very large city. Student racial/ethnic counts (by the 5 categories used by OCR) are given for each school.</li> <li>- SASS 88, 91; Data on community size.</li> <li>- WELS:88; MHES 91; Number of years lived in neighborhood, safety of the neighborhood, participation in community events.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to WELS:88 beginning in 1996 for grades K through 8.</li> <li>- Census Mapping Project in 1993 will allow linkage of community characteristics to school district information.</li> </ul>	<ul style="list-style-type: none"> <li>- CPS; Could theoretically be linked to decennial census to obtain this information. However, it would be a massively time and money consuming operation.</li> </ul>
K. School Readiness	<ul style="list-style-type: none"> <li>- WELS:88 and MHES 91; Data on pre-first grade program participation including day care; nursery or preschool; headstart; or kindergarten.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to WELS:88 beginning in 1996 for children in grades K and 4 to help inform the National Readiness Goal.</li> <li>- MHES 93 or 94 will collect data for grades K through 3 to help inform the National Readiness Goal.</li> </ul>	

CCD - Common Core of Data = Grades PK to 12 (universe)  
 CPS - Current Population Survey = Children ages 3 and above (sample of households)  
 ECLS 96 - Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
 IAEP - International Assessment of Educational Progress  
 NAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 WELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 MHES 91 - National Household Education Survey of 1991 = Grades K to 12 (sample)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)  
 TFS - Teacher Followup Survey = Current and former teachers (sample)

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CHART V. STUDENTS

	Continuing Data Collections	Planned New Initiatives	Gaps
L. Student health-status (nutrition, drug and alcohol use)	<ul style="list-style-type: none"> <li>- SASS:88, 91; Data on availability of diagnostic and prescriptive services and number of students served.</li> <li>- WELS:88; Drug and alcohol use during school, on the way to and from school and outside of school is collected.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to WELS:88 beginning in 1996 for grades K and 4.</li> </ul>	<ul style="list-style-type: none"> <li>- SASS; There is an increasing variety of nutrition and health care services being offered in schools, and the current data collected are limited.</li> </ul>
M. Opportunity to learn	<ul style="list-style-type: none"> <li>- WELS:88; Teachers report specific topical areas that are presented to students in the four core areas of math, English, science and history.</li> <li>- NAEP; Teachers of assessed students report topical areas covered in class. Questions are also included about the amount of homework assigned, television viewing, and type of educational program.</li> </ul>	<ul style="list-style-type: none"> <li>- If funded, ECLS will collect data similar to WELS:88 beginning in 1996 from teachers of sampled children in grades K and 4 for core subjects.</li> </ul>	<ul style="list-style-type: none"> <li>- IAEP; Measure of topical exposure and opportunity to learn to help understand international comparisons of student achievement.</li> </ul>

CCD - Common Core of Data = Grades PK to 12 (universe)  
 CPS - Current Population Survey = Children ages 3 and above (sample of households)  
 ECLS 96 - Early Childhood Longitudinal Survey of 1996 = Grades K and 4 (sample)  
 IAEP - International Assessment of Educational Progress  
 NAEP - National Assessment of Educational Progress = Grades 4, 8, and 12 (sample)  
 WELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
 NHES 91 - National Household Education Survey of 1991 = Grades K to 12 (sample)  
 SASS - Schools and Staffing Survey = Grades K to 12 (sample)  
 TFS - Teacher Followup Survey = Current and former teachers (sample)

## VI. ACHIEVEMENT

The National Education Goals call for dramatic improvements in academic achievement and high school graduation rates over the next decade. Many states have also established or are in the process of establishing education goals of their own that include raising student achievement levels, school completion rates, and postsecondary education achievement. Establishing and reporting on national and statewide outcome measures can provide the states and the nation with indicators of progress toward these goals.

### Continuing Data Collections and New Initiatives

A number of NCES activities monitor the achievement and background conditions of K through 12 students. NCES uses the National Assessment of Educational Progress (NAEP) to monitor the learning of American school children. NCES also supports and participates in a number of international assessment organizations and activities that provide a basis for measuring the progress of American students in an international context: namely, the International Association for the Evaluation of Education Achievement (IEA); the Organization for Economic Cooperation and Development (OECD); the International Assessment of Educational Progress (IAEP); the Second International Mathematics Study (SIMS); and the Third International Mathematics and Science Study (TIMSS).

NAEP is the only nationally representative and continuing assessment of what America's students know and can do in various subject areas. Assessments have been conducted periodically in reading, mathematics, science, writing, history/geography, and other fields since 1969. NAEP monitors and reports the academic achievement of students in fourth, eighth, and twelfth grades. NAEP results have been aggregated at the regional and national levels for reporting purposes; results describe both the current levels and trends over time in academic achievement. Test results are also available for various demographic categories such as sex and race/ethnicity. In 1990, the Trial State Assessment in eighth grade mathematics was reported at the state level, a precedent for NAEP reporting<sup>17</sup>. Future NAEP assessments will continue to develop in the direction of reporting other subject-matter results at the state level. Information related to academic achievement (e.g. teacher qualifications, type of community in which school is located) is also collected from teachers and schools. Through NAEP, objective information on student academic performance is made available to policy makers at the national, state, and local levels.

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<sup>17</sup>The recommendation for State-level NAEP was made in the Alexander-James report, The Nation's Report Card: Improving the Assessment of Student Achievement, which was released in 1987.

Achievement data on American students is also collected through longitudinal surveys of students conducted at periodic intervals. The NELS:88 student sample was the first NCES longitudinal survey to start with a cohort of students below the high school level. The academic performance of NELS:88 eighth graders was assessed in mathematics, science, English, and history/geography. The results of these assessments can be linked with rich background data on students' teachers, principals, schools, and parents, in order to analyze the components of the educational system that affect learning.

The interest which governments around the world have shown in assessing what is learned in school reflects a global recognition that literacy in major subject areas and economic productivity are closely linked. IAEP provides data on the mathematics and science and geography achievement of 9- and 13-year-olds from a number of countries. This international assessment applies technology developed for NAEP in conducting national surveys. Since 1983, Educational Testing Service (ETS) has administered NAEP and IAEP (funded by the National Science Foundation and the U.S. Department of Education). The IEA is sponsoring an International Reading Literacy (IRL) study of students in roughly the equivalent of the 4th and 9th grades in several countries. This study will allow comparisons of reading literacy and its background correlates in participating countries around the world.

TIMSS will assess the proficiency of elementary and secondary students in mathematics and science. TIMSS will also attempt to provide a context for that achievement by examining the teacher, school, home and societal factors that help explain national differences in achievement. The final design is expected to include a longitudinal study of math and science learning at the fourth and eighth grades, performance assessments such as problem solving and laboratory experiments, in-depth study of teachers' instructional practices including classroom observation and examination of students' assignments, and case studies of key educational policy issues in nations of particular interest to the United States. TIMSS will be designed so that individual states in the U.S. can elect to participate in the study and can compare their results to those of the nation and other countries. The results are expected to be compared to the results of the National Assessment of Educational Progress.

### **Gaps**

NAEP is a dynamic instrument for monitoring the academic achievement of American students and is therefore continually undergoing change to meet new and expanding demands. Gaps in content coverage have been identified and remedied since NAEP's inception in 1969. In addition, NAEP continues to incorporate new testing technologies and other psychometric advances in its operations.

NAEP will continue to expand its state-level assessment in the years to come. State-level assessments are currently planned for 1994 in reading, mathematics, and



science for grades 4, 8, and 12. Currently, the state NAEP sample is not large enough to provide district-level assessment results, and NAEP is prohibited by statute from doing so. In addition, more data on environmental influences on student achievement could help to explain observed differences. Data on student motivation, percent of TV viewing that is educational programming, and exposure (pre- and post-natally) to drugs, alcohol, and tobacco are lacking.

## **Achievement Bibliography**

### **Released Reports**

Learning to Write in Our Nation's Schools: Instruction and Achievement in 1988 at Grades 4, 8, and 12 (1990)

The Writing Report Card, 1984 to 1988: Findings from the Nation's Report Card (1990)

Learning to Read in Our Nation's Schools: Instruction and Achievement in 1988 at Grades 4, 8, and 13 (1990)

The Reading Report Card, 1971 to 1988: Findings from The Nation's Report Card (1990)

The Geography Learning of High-school Seniors (1990)

The Civics Report Card: Trends in Achievement from 1976 to 1988 at Ages 13 and 17; Achievement in 1988 at Grades 4, 8, and 12 (1990)

The U.S. History Report Card: The Achievement of Fourth-, Eighth-, and Twelfth-grade Students in 1988 and Trends from 1986 to 1988 in the Factual Knowledge of High-school Juniors (1990)

The Mathematics Report Card: Are We Measuring Up? Trends and Achievement Based on the 1986 National Assessment (1988)

The Science Report Card: Elements of Risk and Recovery (1988)

The State of Mathematics Achievement (1991)

Trends in Academic Progress: Achievement of U.S. Students in Science, 1969-70 to 1990; Mathematics, 1973 to 1990; Reading 1971 to 1990; and Writing, 1984 to 1990 (1991)

The 1990 Science Report Card (1992)

E.D. Tabs - The Tested Achievement of The National Education Longitudinal Study of 1988 Eighth Grade Class (NCES 91-460)

A Profile of The American Eighth Grader (NCES 90-458)

A Profile of Schools Attended by Eighth Graders in 1988 (NCES 91-129)

E.D. Tabs - National Education Longitudinal Study of 1988: Eighth Grader's Reports of Courses Taken during the 1988 Academic Year by Selected Student Characteristics (NCES 90-459)

Language Characteristics and Academic Achievement: A Look at Asian and Hispanic Eighth Graders in NELS:88 (NCES 92-479)

Characteristics of At-Risk Students in NELS:88 (NCES 92-042)

Technical Report - Psychometric Report for the NELS:88 Base Year Test Battery, (April 1991--NCES 91-468)

#### **Reports in Preparation**

NELS:88 First Follow-Up Student Profile

Trend Report - Comparison of NELS:88 and HS&B Students

# CHART VI. ACHIEVEMENT

A. United States Assessments	Continuing Collections	Planned New Initiatives	Gaps
<p>MAEP; Assessments of: - Civics; Content/Cognition; 1987/88. - Mathematics; Content/Process; 1985/86 and 1989/90. A MAEP First: Reporting 8th grade math results by state (in the Trial State Assessment). Thirty-seven states and three jurisdictions participated. - Reading; Background/Cognitive; 1983/84, 1985/86, 1987/88 and 1989/90. - Science; Content/Cognition; 1985/86 and 1989/90. - Writing; Content/Task; 1983/84 and 1987/88. - Computer Competence; Content; 1985/86. - U.S. History; Content; 1987/88. - NELS:88; Eighth grade cognitive tests in English, math, science and History/Civics/Geography. NELS Cognitive tests are individually linkable to student, parent, teacher and school questionnaire data through the individual student ID number.</p>		<p>- MAEP 92: Reading, Writing, Mathematics. The 1992 program will report fourth grade reading and math and eighth grade math for the second time at the state level. Participating states may compare their results to the national statistics and to each other. - MAEP 94: Reading, Mathematics, Science, U.S. History, Geography. - MAEP is authorized through the 1994 Assessment; the schedule for assessments is as follows: every 2 years - Reading and Mathematics; every 4 years - Science or Writing; every 6 years - U.S. History and Geography. - ECLS 96 study, if funded, including both a Kindergarten and 4th grade cohort will be similar to the NELS:88 design of student data linked to student assessments. No definite plans for types of test at either grade level have been finalized.</p>	<p>- MAEP does not currently allow for the analysis of the interplay between socio-economic status and academic achievement. Need more information about motivation of students regarding learning and test-taking, as well about student aspirations regarding life and careers. Need to find out more about expectations of parents and schools. How much educational TV do American children watch? - Cognitive test data for grades K through 7 which can be linked to student background characteristics.</p>
<p>B. International Assessments</p>	<p>IAEP 88; - Mathematics; Content/Process. - Science; Content/Cognition. IAEP 91; - Mathematics; Content/Skills. - Science; Content/Skills. - Geography; Skills/Tools/Content. Second International Math and Science Study (SIMSS); International Reading Literacy (IRL);</p>	<p>1994: Third International Math and Science Study (TIMSS).</p>	<p>- Development of instruments that are comparable across languages and cultures is ongoing. - IAEP; Teacher background information is not currently collected. Topical coverage is not available from IAEP at the classroom level, although information on national curricula is collected.</p>

IAEP - International Assessment of Educational Progress  
MAEP - National Assessment of Educational Progress  
NELS:88 - National Education Longitudinal Survey of 1988 = Grade 8 (sample)  
Content = Subject area content items  
Cognition = Items showing that student knows, understands and applies, and integrates content  
Process = Process Area: conceptual; procedural; problem solving  
Background = Background questions  
Task = Writing Task (Informative, Persuasive, Imaginative)

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## **Appendix**

### **Snapshot of Elementary/Secondary Surveys on Grades K through 12**

#### **Common Core of Data (CCD)**

- Universe survey
- Public sector only
- National and state estimates
- Survey of states, school districts, and schools
- Annual
- Current data series began in 1985-86

#### **Private School Survey (PSS)**

- Universe survey
- Private sector only
- National and affiliation level estimates
- Survey of schools
- Biennial
- Current data series began in 1989-90

#### **Schools and Staffing Survey (SASS)**

- Sample survey
- Public and private sectors
- National estimates (public and private)
- State estimates (public only)
- Affiliation estimates (private only)
- Linked survey of school districts (public only),  
schools, principals, and teachers
- Biennial
- Current data series began in 1987-88

#### **Teacher Followup Survey (TFS)**

- Sample survey
- Public and private sectors
- National estimates
- One-year followup of sample of SASS teachers
- Survey of teachers, can be linked to SASS data on  
teacher, principals, schools, and school districts
- Biennial
- Current data series began in 1988-89

**Fast Response Survey System (FRSS)**

- Sample survey
- Sector varies by survey
- National estimates
- Survey population varies
- Periodic, in response to special requests
- No data series (topics selected to respond to data needs of Department policy offices)

**National Household Education Survey (NHES)**

- Sample survey
- Survey of households (random digit dialing)
- National estimates
- Annual beginning in 1993
- Data series on Early Childhood and Adult Education began in 1991, other series may follow

**National Assessment of Education Progress (NAEP)**

- Sample survey
- Public and private sectors
- National estimates; State estimates in Math for 1991
- Survey of students, background information on teachers and schools
- Biennial
- Student achievement data in various subjects for fourth, eighth, and twelfth graders
- Parts of data series began in 1969

**National Educational Longitudinal Survey of 1988 (NELS:88)**

- Sample survey
- Public and private sectors
- National estimates (public and private)  
Private estimates for NAIS, Catholic, and other
- Survey of students, linked to teacher, parent, and school data
- Longitudinal, biennial followups
- Base year 1988 sample of eighth graders

**National Educational Longitudinal Survey of 1998 (NELS:98)**  
(proposed)

- Sample survey
- Public and private sectors
- National estimates (public and private)
- Survey of students, linked to teacher, parent, and school data
- Longitudinal, biennial followups
- Base year 1998 sample of eighth graders

**Early Childhood Longitudinal Survey of 1996 (ECLS) (proposed)**

- Sample survey
- Public and private sectors
- National estimates (public and private)
- Survey of students, linked to teacher, parent, and school data
- Longitudinal, followup interval to be determined
- Base year 1996: sample of one-year olds and kindergartners

**Census Mapping Project**

- Universe and sample based on decennial Census short and long forms, respectively
- Public school districts
- District-level data on community characteristics
- Every 10 years
- Linkable to all national surveys with district components (SASS, CCD, NELS:88)
- Available in 1993

**Current Population Survey (CPS)**

- Sample survey
- Public and private sectors
- National estimates
- Survey of households
- Annual (October supplement provides data on education)
- Education of children three years old and above
- Data series (basic enrollment) began in 1947



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